



Social Media Tactics To Potentiate Value Co- Creation For Startups

Author: Miguel Xander

Master in Innovation and Technological Entrepreneurship

Supervisor: Alexandra Xavier
Co-supervisor: Beatriz Casais

July 2018

© Miguel Xander, 2018

Abstract

For startups, open innovation and the collaboration with external entities seems substantial in order to succeed in business. Value co-creation is a concept that has recently been used to characterize company-driven strategies inside open innovation. However, the concept still lacks frameworks and guidance that is needed by companies. Therefore, the presented work merges chosen parts of corresponding literature to a consolidated framework that offers firms guidance on how to implement co-creation of value. Social media is included as a communication platform, which is a potentially great opportunity for firms that can help extracting information for co-creation processes in a low-cost and highly efficient manner. This master thesis focusses on three key factors concerning social media engagement in postings: *Post Type*, *Post Caption* and *Incentives*. The reviewed studies have in many cases deviating findings for these aspects, which is why this work aims to identify the key factors that promote user engagement in social media co-creation processes. For that purpose, a survey was developed and completed by a sample of 830 participants. It found that pictures increase the engagement more than videos, text-only reduces it. Contrary to expectations, captions with more than three sentences do not decrease the engagement, however, call to actions do decrease it. The literature and the findings conclude the following main recommendations for action: Companies should be transparent about all their activities and give customers access to product and brand information. Their social media postings should use pictures that include an educational message about their products and offer the possibility to win something to increase the overall engagement. Through this dissertation the author offers guidance for practitioners, especially startups, seeking to start co-creation activities.

Table of Contents

Abstract	III
Table of Contents	V
List of Figures	VI
List of Tables	VII
List of Abbreviations	X
1 Introduction	1
2 Literature Review	4
2.1 Open Innovation: Crucial for Startups?	6
2.2 Value Co-Creation: An Overview	8
2.3 Social Media: A Co-Creation Tool?	17
2.4 User Engagement in Social Media	22
2.5 The Framework and Conclusion	25
3 Research	28
3.1 Methodology	28
3.1.1 Research Question & Hypotheses	28
3.1.2 Research Design	31
3.1.3 Description of Sample	33
4 Presentation of Results	37
4.1 Hypothesis Testing	37
4.1.1 Open Innovation	37
4.1.2 Value Co-Creation	38
4.1.3 Post Type	44
4.1.4 Post Caption	50
4.1.5 Incentives	55
4.2 Recommendations for Action	58
5 Conclusion	64
6 Bibliography	67

List of Figures

Figure 1: The Traditional Concept of a Market (Prahalad & Ramaswamy, 2004).....	9
Figure 2: The Emerging Concept of the Market (Prahalad & Ramaswamy, 2004).....	10
Figure 3: Building Block of Interactions for Co-creation of Value (Prahalad & Ramaswamy, 2004).....	15
Figure 4: Most Popular Social Networks (Statista, 2018).....	21
Figure 5: Implementing Co-Creation Using Social Media (Author's Elaboration)	25
Figure 6: Sample for Likert Scale	32
Figure 7: Age (in %)	34
Figure 8: Gender (in %)	34
Figure 9: Nationality (in %)	35
Figure 10: Education (in %)	35
Figure 11: U&G Approach And The Importance of Its Benefits (H4)	43

List of Tables

Table 1: Literature-Concept Overview.....	4
Table 2: Social Media Classification In Five Main Categories (Constantinides & Fountain, 2008)	18
Table 3: Post-Type Overview	23
Table 4: Hypotheses Overview.....	28
Table 5: Social Media Usage.....	36
Table 6: Companies and Open Innovation – Frequency Table (H1).....	38
Table 7: Companies and Open Innovation – Mean (H1)	38
Table 8: User Willingness for Co-Creation – Frequency Table (H2).....	39
Table 9: User Willingness for Co-Creation – Mean (H2)	39
Table 10: Companies Allowing Access to Internal Information – Frequency Table (H3)	40
Table 11: Companies Allowing Access to Internal Information – Mean (H3).....	40
Table 12: Companies Providing Transparency – Frequency Table (H3).....	40
Table 13: Companies Providing Transparency – Mean (H3)	41
Table 14: Companies Offering Benefits for Co-Creation – Frequency Table (H3).....	41
Table 15: Companies Offering Benefits for Co-Creation – Mean (H3).....	41
Table 16: Social Media As The Best Way For Communication – Frequency Table (H3)	42
Table 17: Social Media As The Best Way For Communication – Mean (H3)	42
Table 18: Importance Of The DART-Model – Mean Of All Blocks (H3).....	42
Table 19: Number of Likes on Pictures vs. Videos – Frequency Table (H5)	44
Table 20: Number of Likes on Pictures vs. Videos – Mean (H5).....	44

Table 21: Number of Comments on Pictures vs. Videos – Frequency Table (H5)	45
Table 22: Number of Comments on Pictures vs. Videos – Mean (H5)	45
Table 23: Likes on Pictures – Frequency Table (H5)	45
Table 24: Likes on Pictures – Mean (H5).....	46
Table 25: Likes on Videos – Frequency Table (H5)	46
Table 26: Likes on Videos – Mean (H5).....	46
Table 27: Comments on Pictures – Frequency Table (H5).....	46
Table 28: Comments on Pictures – Mean (H5)	47
Table 29: Comments on Videos – Frequency Table (H5)	47
Table 30: Comments on Videos – Mean (H5)	47
Table 31: Mean Values for the Engagement on Pictures vs. Videos (H5)	47
Table 32: Correlation between the Engagement on Pictures vs. Videos (H5) ..	48
Table 33: Test for Paired Samples for the Engagement on Pictures vs. Videos (H5).....	48
Table 34: Likes on Text-Only Postings – Frequency Table (H6)	49
Table 35: Likes on Text-Only Postings – Mean (H6).....	49
Table 36: Comments on Text-Only Postings – Frequency Table (H6)	49
Table 37: Comments on Text-Only Postings – Mean (H6).....	50
Table 38: Mean Value for the Total Engagement on Text-Only Postings (H5) .	50
Table 39: Likes Based on Posting Descriptions – Contingency Table (H7)	51
Table 40: Comments Based on Posting Descriptions – Contingency Table (H7)	51
Table 41: Effect of Questions in Descriptions on the Number of Comments – Frequency Table (H8)	53
Table 42: Effect of Questions in Descriptions on Comments – Mean (H8)	53
Table 43: Effect of Demand for Comments in Descriptions on the Number of Comments – Frequency Table (H8).....	53
Table 44: Effect of Demand for Comments in Descriptions on the Number of Comments – Mean (H8).....	53

Table 45: Effect of Demand for Likes in Descriptions on the Number of Likes – Frequency Table (H8).....	54
Table 46: Effect of Demand for Likes in Descriptions on the Number of Likes – Mean (H8)	54
Table 47: Effect of Call-to-Action in Descriptions on the Engagement – Mean (H8).....	54
Table 48: User Participation in Contests – Frequency Table (H9)	55
Table 49: User Participation in Contests – Mean (H9)	55
Table 50: Possibility to Win Something Affecting the Number of Likes – Frequency Table (H9).....	56
Table 51: Possibility to Win Something Affecting the Number of Likes – Mean (H9)	56
Table 52: Possibility to Win Something Affecting the Number of Comments – Frequency Table (H9).....	56
Table 53: Possibility to Win Something Affecting the Number of Comments – Mean (H9)	56
Table 54: Possibility to Win Something Affecting the Total Engagement – Mean (H9)	57
Table 55: Hypotheses Testing Results.....	58

List of Abbreviations

B2B	Business to business
B2C	Business to consumer
C2C	Consumer to consumer
eWOM	Electronic Word-of-Mouth
G&D	Goods-dominant
MNC	Multi-national corporation
NPD	New product development
R&D	Research and development
SM	Social media
SME	Small and medium sized enterprises
SNS	Social Networking Site
S-D	Service-dominant
U&G	Uses and gratification

1 Introduction

Traditionally, companies developed products or services internally, mostly autonomously with low direct customer interaction, sometimes with the help of classical market research. The internal innovation process was continuously further improved and extended to customers by using methods like focus groups or interviews. However, firms are currently shifting towards a co-creation approach that strongly involves customers in the development of products or services (Prahalad & Ramaswamy, 2004).

For big companies like Starbucks or Burger King, which created own websites for users to participate in their co-creation processes (Kaplan & Haenlein, 2010), it is relatively easy to involve active customers due to their brand awareness. Currently, research in this topic is still underdeveloped, especially in regard to the effect of the company's size (Bashir, Papamichail, & Malik, 2017). Thus, this work focusses its research on the engagement of startups with potential co-creators.

Several scholars suggest using social networking sites to reach a wide range of potential co-creation partners and gain information about product development (Erspective & Lusch, 2015; See-To & Ho, 2014). More and more innovation will be created or co-created in the next years by using social communication networks (Erspective & Lusch, 2015), however, co-creation and especially the customer involvement and integration in this concept still lack sufficient frameworks that help companies to manage this process (Lorenzo-Romero, Constantinides, & Brünink, 2014; Payne, Storbacka, & Frow, 2008).

This work aims to develop a new framework based on several earlier models and the state of the art in user engagement tactics for the implementation of value co-creation through social media. This framework was validated by using

a quantitative approach in order to identify the key critical factors that potentiate user engagement in social media co-creation processes. In the following, the terms customer and consumer are used interchangeably.

Motivation

An internship in a startup and the active involvement in founding a new venture, helped the researcher to understand that value creation is a complex task. This research helps the author to expand this knowledge in how to bring value to customers inside of startups, which might help him in his future career as an entrepreneur. However, the output of the research also helps in the further development of knowledge for social media value co-creation, especially for startups and other less known companies for which social media and open innovation processes are an important competitive factor (Braojos-Gomez, Benitez-Amado, & Javier Llorens-Montes, 2015; Hitchen, Nylund, Ferràs, & Mussons, 2017).

Objective of the Research

The literature offers too little managerial frameworks for value co-creation processes (Lorenzo-Romero et al., 2014; Payne et al., 2008). Social media may be an opportunity for value co-creation purposes. However, for SME's this area is under explored (Bashir et al., 2017). Consequently, the objectives of this work are the following:

- To create a startup-oriented framework for using social media as a co-creation tool with users.
- To identify the key factors that promote user engagement in social media co-creation processes.

Research Question

Based on the literature review, the research question was formulated as follows:

How should a startup company create social media postings to increase the engagement of value co-creation projects?

Methodology

The objective of the present study is how startup companies should create social media postings to increase the engagement of value co-creation projects. Given this aim, the most adequate method to undertake the analysis is to firstly examine the existing knowledge in the literature followed by a quantitative approach with highly measurable and quantifiable results. Keeping in mind the research question, nine hypotheses are developed based on the reviewed literature. For that purpose, an online survey is developed, which created on kwiksurvey.com and distributed through the email servers of the University of Porto. 830 participants completed the survey, who were mainly from Portugal. All categorical variables are presented using frequency tables and their corresponding means. In one case for the comparison of two variables a t-test is performed, including their correlation and a statistical significance set to a p-value of $<0,05$. Other variables are presented using contingency tables to summarize the relationship between each variable.

Structure of the dissertation

Chapter 1 introduces briefly the dissertation's topic and its corresponding issues. The author's motivation for writing this thesis and objectives of the research are presented as well.

Chapter 2 reviews the topic's associated literature and gives an overview of the existing knowledge in this field. Then, chosen parts from the literature are merged to a consolidated framework.

Chapter 3 introduces the research question and all hypotheses. Moreover, the research approach and design of the study are explained.

Chapter 4 analyses the gathered data and tests the hypotheses. After that, recommendations for action are given.

Chapter 5 concludes the dissertation.

2 Literature Review

This literature review follows a systematic quantitative approach and is concept-based presented. For this purpose, the researcher retrieved various academic documents from Scopus and Google scholar. The documents sourced through Scopus and Google scholar were retrieved through a keyword-search including the corresponding concept. The literature was reviewed and categorized depending on their concept in Mendeley. Since many concepts that are used in this dissertation can be traced back to a discussion of very few substantial and/or seminal authors, many documents were abandoned because of their low significance for the topic. The chosen literature and its relationship with the main topics selected for this study is presented in each subchapter of the literature review and is shown in Table 1.

Table 1: Literature-Concept Overview

Article ↓	Concept ↓				
	2.1 Open Innovation	2.2 Value Co-Creation	2.3 Social Media	2.4 User Engagement	2.5 Framework & Conclusion
Alvez et al., 2016		X			
Bashir et al., 2017			X		X
Boyd & Ellison, 2008			X		
Braojos-Gomez et al., 2015					X
Chesbrough, 2006	X				
Chesbrough, 2012	X				
Constantinides & Fountain, 2008			X		
Dahlander & Gann, 2010	X				
De Vries et al., 2012				X	X

Erspective & Lusch, 2015		X	X		
Hitchen et al., 2017	X				X
Huizingh, 2011	X				
Jeppesen, 2006		X			
Kaplan & Haenlein, 2010			X		
Kim & Yang, 2017				X	X
Kujur & Singh, 2017				X	
Lombardo & Cabiddu, 2017		X			
Laursen & Salter, 2006	X				
Lorenzo-Romero et al., 2014		X			X
Martini et al., 2014			X		
Nambisan & Baron, 2009		X			X
Obar, 2015			X		
Obar et al., 2012			X		
Payne et al., 2008		X	X		X
Petri & Jacob, 2016		X			
Piller et al., 2012	X		X		
Pletikosa Cvijikj & Michahelles, 2013			X	X	X
Ramaswamy, 2004		X			X
Ranjan & Read, 2016		X			
Sabate et al., 2014				X	X
Schultz, 2017				X	X
See-to & Ho, 2014		X	X		
Spender et al., 2017	X				
Statista, 2018			X		
Storbacka et al., 2016			X		
Su et al., 2015				X	X
Swani et al., 2017				X	
Von Hippel, 2005	X				

2.1 Open Innovation: Crucial for Startups?

Open innovation is described in a variety of ways, which increases the depth of the concept, but creates obstacles for theoretical development (Huizingh, 2011). One of the most cited concepts is described by Henry Chesbrough, the “father of open innovation”, who describes open innovation as the purposive inflow and outflow of knowledge in order to accelerate internal innovation and expand the market for external use of innovation (Chesbrough, 2006; Huizingh, 2011). He further points out that it can be seen as the antithesis of the traditional internal innovation model, in which a firm develops innovations internally and then distributes them (Chesbrough, 2012). Laursen & Salter, (2006) describe as one of the central parts of all general innovation processes the identification of new ideas that have the potential to be commercially exploited. Firms spend a considerably great amount of time, money and other resources in the identification process for new innovative opportunities. Nevertheless, the innovative performance of a firm can be positively influenced by its openness to external sources and search channels for such opportunities, as many knowledge sources can only be found outside of the company (Laursen & Salter, 2006). Accordingly, open innovation assumes that firms should combine external and internal ideas and paths to market while they are developing innovations. Business models define the requirements for each specific innovation. By that, they are creating innovation with utilizing internal and external ideas and are making sure that a portion of this value is claimed by the company (Chesbrough, 2012).

There are two different concepts that are worth to distinguish: The outside-in and the inside-out (Chesbrough, 2012):

- The outside-in describes the company's innovation process opening to external contributions. This aspect of open innovation is more researched in academia and more used in the industry.
- The inside-out describes firms allowing others to use unused and underutilized ideas in their businesses. This aspect of open innovation is both less researched in academia and less used in the industry

This work uses the former approach. The reason for that is that external contributions seem indispensable for startups (Spender, Corvello, Grimaldi, & Rippa, 2017).

In contrast to Chesbrough's approach, von Hippel compares open innovation to open-source software and uses this concept as a base for his argumentation. He points out that innovators should freely reveal information, since patents only have limited value in many fields. In contrary, there is hiding information like trade secrets, which is unlikely to be successful for too long and should not be used as best practice (Von Hippel, 2005).

In both approaches, there are generally obvious disadvantages for companies in open innovation. There is a substantial difficulty in capturing benefits that occur from the innovation process. Competitors may be better positioned with certain resources like knowledge or production facilities that enable a superior use of the technological advance. Furthermore, it is challenging for firms to choose what internal resources like know-how to reveal to the external environment. For larger companies this holds an important issue to whether patent or disclose innovations. Smaller companies normally do not hold such heavy resources (Dahlander & Gann, 2010).

Both, von Hippel and Chesbrough share the insight that opening up innovation processes is a powerful mechanism to accelerate innovation development and its outcomes. However, Chesbrough's argumentation includes business models that claim a portion of value for the company e. g. through patents, whereas von Hippel argues that all information should be open and free since every company that hands out information eventually profits from the innovation as an end-user (Chesbrough, 2012; Von Hippel, 2005). This split between Chesbrough and von Hippel in the open innovation concept is generally applicable. Scholars either chose Chesbrough's or von Hippel's definition (Chesbrough, 2012).

Open innovation is especially for small and medium sized enterprises (SME) important since they do not have the financial resources that large companies have, to maintain an internal research and development (R&D) program. This also affects production, marketing and distribution next to R&D. Diversification to lower risks in SME's is difficult as well since they mostly can just work on a few projects at a time. Nevertheless, due to their greater flexibility, they might

be more capable in terms of radical innovation. Due to their firm's size and limited resources, SME's are forced to collaborate with other small businesses and entrepreneurs (Hitchen et al., 2017). Spender, Corvello, Grimaldi, & Rippa (2017) call building of relationships with external partners a priority for successful startups and describe open innovation and startups as closely related from a scientific perspective. The consequently emerging knowledge flow needs to be managed since it affects internal choices in the new venture. However, how startups manage knowledge flows among different partners remains unsolved (Spender et al., 2017).

Conclusion

The reviewed literature described the concept and many advantages of open innovation for companies (Chesbrough, 2006; Hitchen et al., 2017; Spender et al., 2017; Von Hippel, 2005).

Moreover, the discussed literature leads to the assumption that open innovation gets more important the smaller the company is. Following this approach, open innovation must be substantial for startups and entrepreneurs. They must collaborate with external entities in order to succeed. There are different ways for startups to receive external contributions and value co-creation has recently been used to characterize company-driven strategies inside an open innovation approach (Piller, Vossen, & Ihl, 2012).

In the literature review of this topic, there was no approach found to the relationship between the company and the customer, which this work will research in hypothesis H1.

2.2 Value Co-Creation: An Overview

The Company-Centric View vs. Value Co-Creation

In order to understand the concept of value co-creation, we first take a look at the opposing traditional concept: The product-centric or firm-centric view.

The product-centric or firm centric view derives from the market image itself, where companies sell products or services to consumers with a view that firms

can develop goods, services, marketing material and distribution channel autonomously and therefore without or just with little customer interaction until the point of exchange (Prahalad & Ramaswamy, 2004).

As shown in Figure 1, firms traditionally focus on the exchange of value with the customer and extract through this action the total economic value. This action is separated from the rest of the process, which leads to the conclusion that the only communication flows from the firm to the customer, which means the consumer has to be persuaded by the company, in order to extract the economic value (Prahalad & Ramaswamy, 2004).

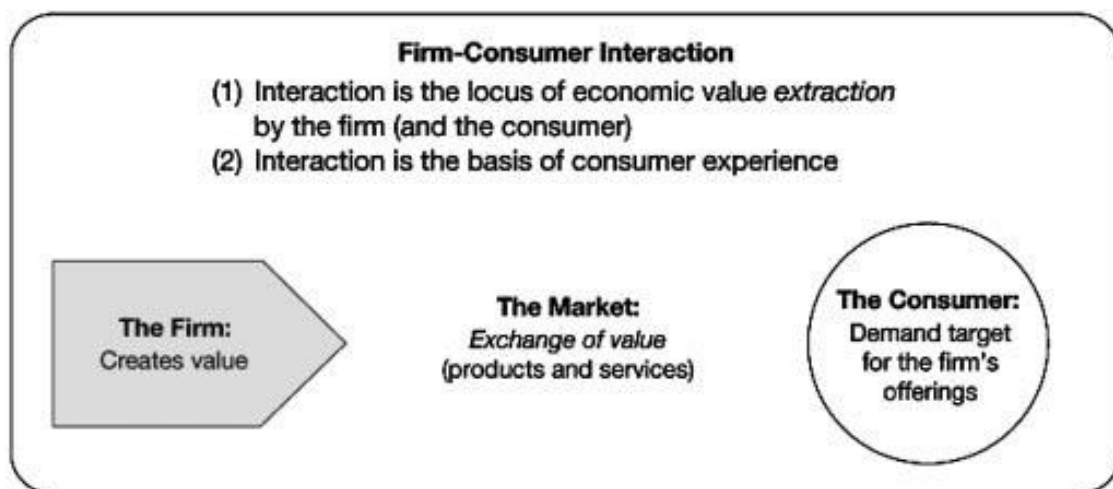


Figure 1: The Traditional Concept of a Market (Prahalad & Ramaswamy, 2004)

Opposing to this theory, we can find in the literature examples when customers get empowered by being informed and well-connected. These consumers are actively learning and analyse and evaluate the traditional value chain process. By consumer-to-consumer communication they inform themselves and create a new source of information, so they do not have to rely on the company's information. With the gained information from transparent businesses and consumer-to-consumer (C2C) communication, customers are more willing to negotiate prices and other terms like quality or quantity. Therefore, customers become increasingly aware of their negotiating power, which means that companies face the pressure of an implicit negotiation that takes place with every transaction. Companies that do not recognize or ignore this development

may risk substantial consequences in the future (Prahalad & Ramaswamy, 2004).

The Co-Creation Concept

In order to tackle this shift and avoid facing serious consequences, firms should consider the concept of co-creation. It puts the focus completely on the interaction between company and customer as the fixed point of value creation. Nevertheless, the interaction can take place several times, which may also include the traditional exchange interaction. All of these meeting points can be an opportunity for value creation and also value extraction for both parties (Prahalad & Ramaswamy, 2004).

An important concept of this new approach is based on the experiences that can be co-created. All created experiences must be in line with the value proposition of the firm. The focus is less about the products, but rather about creating the experiences that are created within and the relationship that is formed between the consumer and the company (Payne et al., 2008).

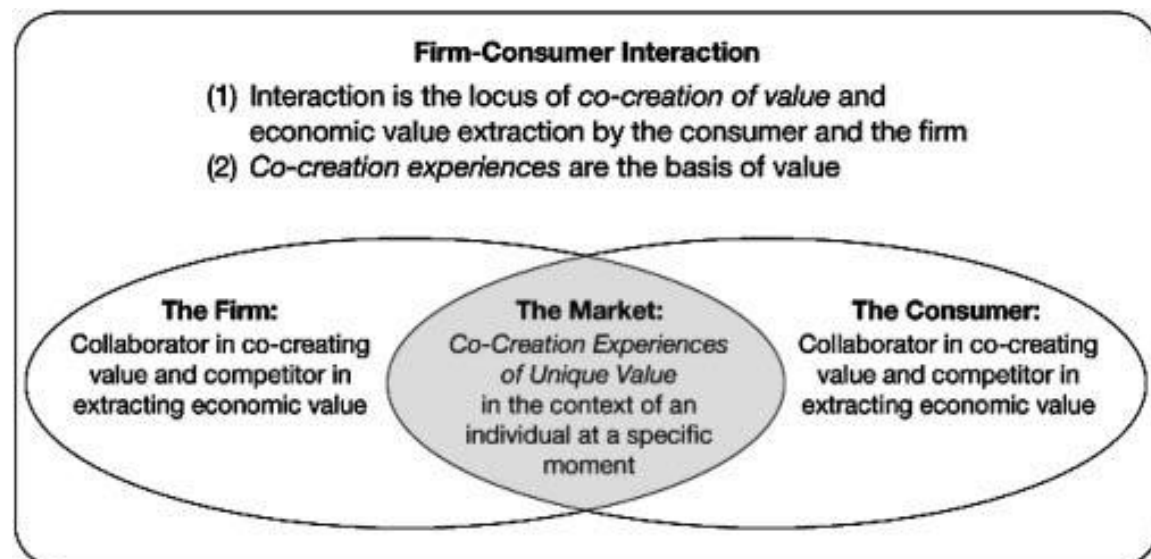


Figure 2: The Emerging Concept of the Market (Prahalad & Ramaswamy, 2004)

Concluded, there should be an interaction between a company and its customers that may create value for both parties, but how does a company get customers motivated for such actions?

Alves, Fernandes, & Raposo (2016) clustered value co-creation into four clusters by analyzing the most cited articles in literature:

Cluster 1: Refers to co-creation's logic as a driver of business innovation. It includes different service oriented perspectives and describes how co-creation takes place and who actually co-creates.

Cluster 2: Refers to the development of new products and services. Describes co-creation as a source of innovative ideas among companies. Focuses on the enhancement of the firm's innovation.

Cluster 3: Refers to the experience of consumers in co-creation processes. Among other things, this cluster encourages the concept that co-creating customers lead to higher loyalty.

Cluster 4: Refers to co-creation as the foundation of relational marketing focusing on firms and customers in order to obtain resources and advantages that create value.

Theoretical Dimensions

We can distinguish between two theoretical dimensions in value co-creation. Ranjan & Read (2016) conclude co-production and value-in-use as the following:

Co-production is the first dimension and describes the direct or indirect co-working with customers, which can mean to participate in the design process of products or services. It is characterized by customer interaction through physical and mental activities and mutual exchange of expertise. Generally speaking, it is a sum of activities within networks with economic and social actors. Co-production consists of the following three elements (Ranjan & Read, 2016):

- 1) Knowledge (sharing): The element that comprises sharing consumer's knowledge, ideas and creativity. Information sharing compared to independent working results in better outcomes due to shared inventiveness and better evaluation of needs. Moreover, it can activate skills at various times that help co-creating value.
- 2) Equity: Describes a firm's willingness to share control to empower consumers and the consumer's desire to contribute in co-creation activities.

- 3) Interaction: Primary interface between firm and consumer while doing co-production. During interaction praise, criticism and suggestions about a product or service are exchanged, which leads to a raised involvement of participating entities. In the end, it achieves making combinations and solutions for new and unique purposes possible.

Value-in-use arises through the process of consumption which is mostly independent from company interaction. It requires customers to learn how to use, repair and maintain a product or service proposition. It is the experimental assessment of a product or service proposition beyond its functional attributes. Value-in-use is comprised in three elements (Ranjan & Read, 2016):

- 1) Experience: Empathetic, emotional, and memorable interaction with intrinsic value. It can be provided by the firm by being part of products or services. Consumers link these experiences across their physical, cognitive and affective dimensions, which result in value in use and thus co-creating value.
- 2) Personalization: Refers to the use process that can either be objective or perceived. Personalized propositions extend the boundaries of realized consumer value and therefore enable a significant reconfiguration of future production for use and exchange value.
- 3) Relationship: Relationships are the basis for an environment of active communication and engagement. It results combined with collaboration in customer empowerment to develop solutions that create value.

Customer Involvement

Petri & Jacob (2016) focused in their research on the solution business in B2B markets. They discovered five typical needs that customers in their industry have while engaging with a provider:

- 1) Capacity: Customers increasingly lack workforce capacity that prompts them to engage with providers to develop solutions.
- 2) Methodological expertise: Customers lack methodological expertise to develop a solution internally. The application of certain frameworks and structures, as well as supporting tools to develop a solution are deeply needed by customers.

- 3) Functional expertise: Customers might lack specialized knowledge in a certain function, for example in its software department.
- 4) Market insight: Customers expect providers to transfer external market knowledge into the organization.
- 5) Legitimation: Legitimation reasons become particularly important in strategic and critical decisions. Providers may engender more trust than internal employees. So, providers can ensure the actions of a customer and justify the solution.

For the enabling of B2B value co-creation in the solution business, Petri & Jacob (2016) identified eight customer variables that affect co-creation in a variety of ways:

- 1) Objective and scope: The first part, *objective*, describes the necessity that customers define the final outcome and the solution value. The *scope* describes the extent to which the objective must be achieved.
- 2) Target orientation: Describes all actions customers have to undertake to focus on the solution.
- 3) Information and knowledge exchange: Describes the importance of customers providing relevant information to co-create value.
- 4) Commitment: From a provider's perspective, the commitment to a chosen solution should be the customer's responsibility.
- 5) Communication: From a provider's perspective, communication is an important variable that should be coordinated by the customer.
- 6) People: From a customer's perspective, sufficient and qualified people are needed throughout all phases of the project.
- 7) Trust: From a customer's perspective, sharing sensitive information requires *trust* between the actors which make it an essential enabling variable.
- 8) Ownership: Customers consider it important to take the lead in the solution process for value co-creation.

In B2C, the customer's involvement in co-creation processes is dependent on the benefits that each individual seeks. The existing literature (Lorenzo-Romero et al., 2014; Nambisan & Baron, 2009) often refers to the *Uses and Gratification*

Approach (U&G) that arose in the 1940's and assumes that consumers use traditional media to fulfil their wants and needs. It aimed consequently at identifying the benefits for such individuals and divided them in two different dimensions (Lorenzo-Romero et al., 2014):

- 1) *The cognitive dimension* which describes the benefits that customers expect for their participation.
- 2) *The affirmative dimension* which refers to the customer's positive or negative feelings towards the company whilst participating.

Managing these two dimensions, the following four benefits occur (Lorenzo-Romero et al., 2014; Nambisan & Baron, 2009):

- 1) *Learning benefits*: Refer to product-related learning. When participating in co-creation processes, the user gains a better understanding and background knowledge of the products, the technology and the related usage. These learnings belong to cognitive benefits.
- 2) *Social integrative benefits*: Refer to all positive feelings customers may experience in regard to relational and social bonds in their participation of developing new products or services. Such benefits can include the gaining of social identity and the belonging to a social group that works together towards a goal.
- 3) *Personal integrative benefits*: Refer to all benefits that stem from gaining social status inside the social media platform and the enhancement of self-efficacy. Users can influence the project with their contributions which may result in a higher sense of self-efficacy. The contribution of product support on the other hand may improve their reputation inside the project.
- 4) *Hedonic benefits*: Refer to the interest and pleasure that customers might receive, which make the whole co-creation experience mentally stimulating. The discussion about the new service or product and its features, as well as the problem-solving component might make the co-creation process a delightful experience for consumers.

Nambisan & Baron (2009) and Lorenzo-Romero et al. (2014) found out that all four benefits significantly influence the customer's participation in co-creation efforts. Moreover, Nambisan & Baron (2009) found out in their study that in the software/computer industry, product involvement and firm recognition did not

influence the participation in co-creation. On the other hand Jeppesen & Frederiksen (2006) found that firm recognition was an important motivator for customers to participate in product design activities for musical instrument products. It is therefore not clear in what industries both of these factors influence the participation of customers in co-creation. However, the data from the U&G approach may be used as base information for the DART-Model, a model that was created by Prahalad & Ramaswamy (2004) and describes the first step to create a system for value co-creation.

The DART-Model is a framework that can help firms to integrate the co-creation process in their daily business (Payne et al., 2008). It builds the basis for the interaction between the firm and the consumer in four levels: 1) Dialogue, 2) Access, 3) Risk benefits and 4) Transparency (Prahalad & Ramaswamy, 2004).

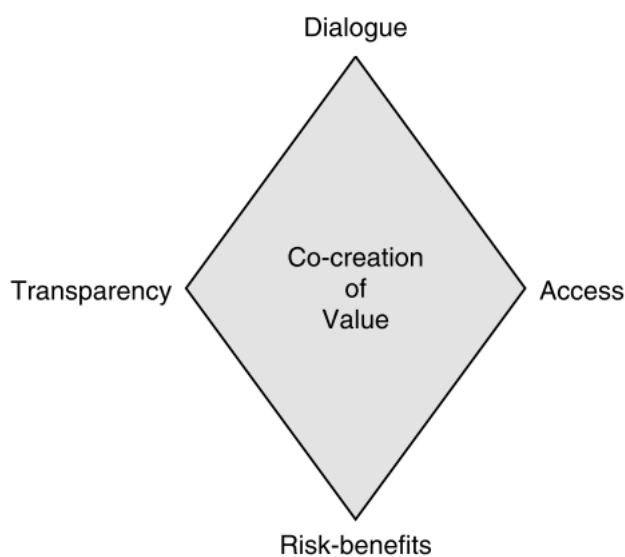


Figure 3: Building Block of Interactions for Co-creation of Value (Prahalad & Ramaswamy, 2004)

The first block *Dialogue* is based on the interactivity, engagement, ability and willingness to interact with each other. The dialogue has to be equal and center around topics that both parties are interested in. Both parties become joint problem solvers. Equal dialogue is just possible with the same level of *Transparency* and information. In former times, firms profited from the information asymmetry, but nowadays consumers have *Access* through high

connectivity to as much information as needed through networks and the firm itself. Through *Dialogue*, *Transparency* and *Access*, the consumer can assess the *Risk-benefits* that come along actions and decisions. An example for that would be a doctor and a patient that are equal according to the DART model. The patient can then assess whether to change the medication according to risks and benefits without just depending on the doctor's expertise, and which creates a personalized understanding of the risk-benefits of the model (Prahalad & Ramaswamy, 2004).

The question that arises from this section is: How do companies access the dialogue with consumers? Through what medium? Especially for startups, that are just little known it might be a difficult task to start the interaction for value co-creation.

Practices

Lombardo & Cabiddu (2017) did research in the industry of B2B service providers and identified three categories of practices that providers and their customers can use while interacting in order to co-create value:

- 1) *Access to capital*: Providing access to know-how, financial resources and higher positions in the organizational hierarchies were critical for enabling value co-creation. Moreover, these practices determined the amount of capital that was brought into the project.
- 2) *Capital exploitation*: Refers to the enabling of the exploitation of any currency into more attractive forms of capital. The most successful practices for value co-creation were those that targeted highly liquid currencies.
- 3) *Capital attrition*: Value co-creation can be related to capital loss. Lombardo & Cabiddu (2017) found practices both promoting and preventing the attrition of currencies. However, their data did not reveal whether the overall negative influence was counterbalanced or not.

Conclusion

This subchapter discussed a rather young concept that still needs to be explored thoroughly. However, the literature described the concept disregarding the customer perspective and concentrated on corporate importance (Payne et

al., 2008; Prahalad & Ramaswamy, 2004), which is why this work will research the customer perspective on value co-creation in hypothesis H2. It seems like frameworks and guidance from research is needed by companies (Prahalad & Ramaswamy, 2004). The DART-Model is one of these few approaches and builds the basis for any company-customer interaction. Nevertheless, the model neglects the customer validation, which this work approaches in hypothesis H3. Another model is the U&G approach which includes four benefits customers may want to be stimulated during co-creation activities (Lorenzo-Romero et al., 2014; Nambisan & Baron, 2009). Since the most important benefit still needs to be researched industry independently, hypothesis H4 addresses that matter. Moreover, some scholars see potential in social media or social networking sites that may help to extract information and start co-creation processes (Erspective & Lusch, 2015; See-To & Ho, 2014). Such thoughts from this chapter are continued in the following parts of the literature review and will furthermore be used to create a consolidated framework in chapter 2.5.

2.3 Social Media: A Co-Creation Tool?

A universal definition or concept for social media, social media sites or social networking sites is to this date non-existent. All three terms are often used interchangeably, but never have a consistent description in literature (Boyd & Ellison, 2008; Obar, 2015). Describing and conceptualizing social media bring up two distinct problems: 1) Since social media is a rather young concept, many social media sites are still being developed, abandoned, ignored or reconceptualised every day. 2) social media have functions and benefits like many other traditional communication systems like the telephone or emails. Thus, should the telephone or emails be seen as social media? (Obar, Zube, & Lampe, 2012)

Nevertheless, there are definitions that try to conceptualize the term social media. Kaplan and Haenlein described social media as “[...] *a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated*

Content.” (Kaplan & Haenlein, 2010, p. 61). They describe Web 2.0, a platform in which all users collaboratively work on the content and the applications in a constant manner, as the basis for social media. User generated content represents every way the users make use of social media (Kaplan & Haenlein, 2010). Boyd and Ellison include also the social networking component and define social networking sites “[...] as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system.” (Boyd & Ellison, 2008, p. 211). They add that the terms of these points may vary in different social media sites (Boyd & Ellison, 2008).

Constantinides & Fountain (2008) suggest the classification in five main categories: *Blogs* that are online journals like Gizmodo.com; *Social Networks* like Facebook.com, which let users create personal sites, share their own content and enables them to communicate with others. *(Content) Communities* that share particular types of content, e. g. Youtube.com; *Forums/bulletin boards* like Epinions.com, which share ideas and information usually around a specific interest; and *Content aggregators* like Google.com, that let users completely customize the web content they want to access.

Table 2: Social Media Classification In Five Main Categories (Constantinides & Fountain, 2008)

Type	Description	Example
<u>Blogs</u>	Online journals.	Gizmodo.com
<u>Social networks</u>	Allow users to create personal sites, share content and communicate with others.	Facebook.com
<u>(Content) Communities</u>	Share particular types of content.	Youtube.com
<u>Forums/bulletin boards</u>	Share ideas and information usually around specific interest.	Epinions.com
<u>Content aggregators</u>	Allow users to fully customize the web content they want to access.	Google.com

The most popular of these five categories nowadays are social network sites. Individuals and companies can create pages for themselves and interact with other users. This holds a huge potential for firms developing their company's brand or product image through electronic word-of-mouth (eWOM) in a low-cost manner (See-To & Ho, 2014).

Accordingly, to this recent development and the great potential, this work will focus exclusively on social networking sites in order to provide inexpensive recommendations for action.

Social Media for Value Co-Creation

The co-creation concept has previously been tried to be implemented by companies e. g. by using focus groups in order to gain a deeper understanding of consumer behavior. The issue with that traditional approach is the clear line between the company's representatives and the end consumer. Consequently, firms need an improved method and are currently shifting towards a social media based co-creation process (Martini, Massa, & Testa, 2014). The reason for this is that, social media uses a different way of communication with customers than the traditional methods: Companies can engage with the customer in a direct and timely way that is low-cost and accounts for higher efficiency levels in contrast to former methods. Thus, the communication distance is shortened and constantly available, which makes social media a great opportunity for companies (Martini et al., 2014; Piller et al., 2012). However, not that many firms act comfortably on social media since customer to customer communication slowly gains the power over information on the web (Kaplan & Haenlein, 2010). The reason for this inexperience is that the literature is just now moving from the *what* to the *how* question (Martini et al., 2014) and therefore lacks frameworks for companies to integrate and manage co-creation with (Payne et al., 2008). Additionally, customers increasingly prefer to share their opinions and reviews of products on social networks over traditional market research, which firms started using for potential product enhancements. Nevertheless, there is a limited number of studies that deal with the use of social media for supporting new product development (NPD) (Bashir et al., 2017). Bashir, Papamichail, & Malik (2017) aimed their study on exploring social media for NPD practices in multi-national corporations (MNC's) and

suggest the investigation of such use of social media for SME's and potentially various business sectors. See-To & Ho (2014) suggest using social networking sites (see 2.3) to spread information about the firm's products and receive views and comments from users. This generates an opportunity for the company to interact in a two-way communication with the consumer. Such communication channel, here the user's feedback, does not only help in improving the product design etc., it can also improve the understanding between the two parties and increases spreading the (eWOM) within the user's subscriber base. Moreover, See-To & Ho (2014) anticipate that eWOM has a direct impact on the product's image and on the engagement in value co-creation. Also, they anticipate that value co-creation has an impact on the purchase intention (See-To & Ho, 2014). Erspertive & Lusch (2015), also predict that more and more innovation will be created or co-created by using social communication networks. Such communication platforms are needed for co-creation purposes and social media intensively facilitates this exact interaction between company experts and others. Erspertive & Lusch (2015) describe this interaction as an ongoing process that develops the mind sets of the actors, both the expert's and consumer's, in regard to what they can do as effectual actors, which therefore stimulates innovation.

Storbacka, Brodie, Böhmman, Maglio, & Nenonen (2016) take a global perspective and point out that value co-creation is difficult to observe empirically, but that the actor's engagement and related resource integration is observable. Consequently, it is far more designable and manageable. However, they make clear that managers now need guidance in how they can foster information of effective resources (Storbacka et al., 2016).

The benefits for companies and especially startup are obvious: Cost-reduction, easier customer relationship management, marketing resonance and hopefully attractive results.

Communication

There are several different social media platforms with Facebook being by far the most popular with 2.2 billion active users. Figure 4 shows the most popular social media networks in April 2018. The figure intentionally excludes social networks that are not available in English (QQ, QZone, Sina Weibo, Baidu

Tieba) or which main purpose is calling and instant messaging (WhatsApp, Facebook Messenger, WeChat, Skype, Viber, Line, Telegram) (Statista, 2018).

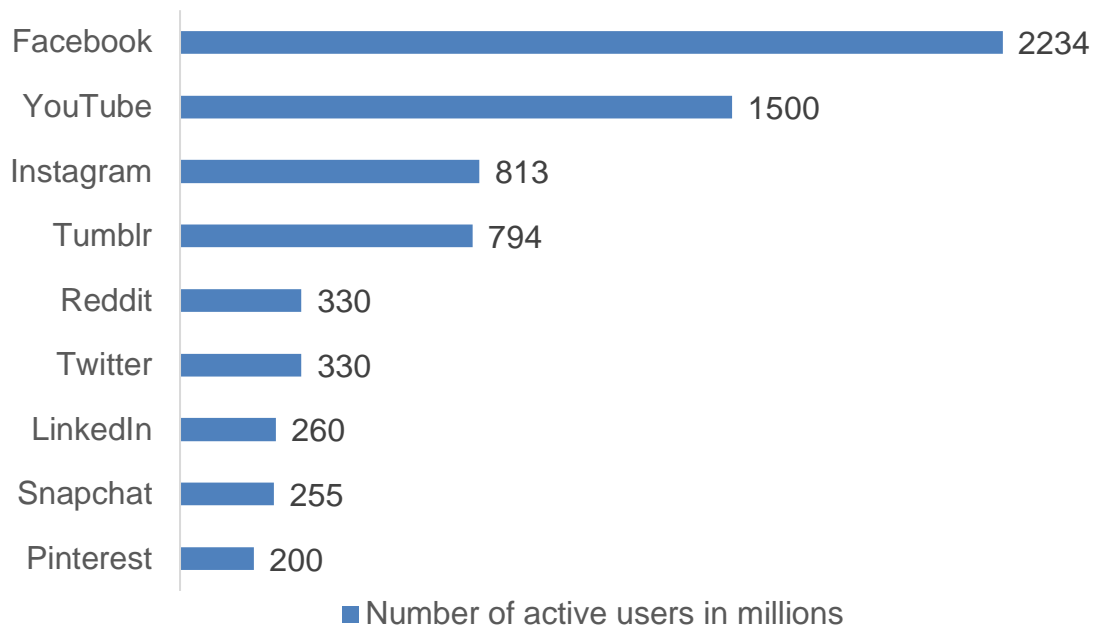


Figure 4: Most Popular Social Networks (Statista, 2018)

On Facebook for instance, firms can create a brand page and share content referred to as postings. Users can then communicate with the company in form of liking, commenting on or sharing these postings (Pletikosa Cvijikj & Michahelles, 2013).

Conclusion

The potential of social media for co-creation processes seems obvious since the direct and timely communication with customers make it low-cost and result in higher efficiency levels. Combined with constantly available communication, it makes social media a great opportunity for companies (Martini et al., 2014; Piller et al., 2012).

However, companies need to know how to engage with users in social media, which leads to the question: How can companies create postings that increase the user's engagement?

2.4 User Engagement in Social Media

Sabate, Berbegal-Mirabent, Cañabate, & Lebherz (2014) classify content attributes for postings in soft and hard criterias: Soft criteria include the semantics and interpretation of a message behind a post. Whereas hard criteria are proven in a quantitative and empirical way. This work only considers hard criteria since they are easily measurable without subjective interpretation.

Post Type

There are several studies conducted in the field of post types that show significant interest in this predictor (De Vries, Gensler, & Leeflang, 2012; Kim & Yang, 2017; Pletikosa Cvijikj & Michahelles, 2013; Sabate et al., 2014; Su, Reynolds, & Sun, 2015).

Table 3 presents an overview of what the literature previously found out about each post type affecting the user engagement: Firstly, Pletikosa Cvijikj & Michahelles (2013) found out in the food/beverages industry that pictures have the greatest positive impact on the number of likes, followed far behind by text-only posting and videos. Regarding the number of comments, text-only postings had the greatest positive impact, closely followed by pictures and videos with a negative impact. Years later, Kim & Yang (2017) proved in various industries that pictures have a positive impact on the number of likes, but a negative impact on the number of comments. In that study, videos also had a positive impact on the number of likes, but more than 50% lower than for photos. However, for comments, the negative impact of videos was 50% lower. Another study in the travel agency sector similarly found that postings including pictures have a 22% higher engagement than video postings and 54% more than text postings. Videos on the other hand receive 27% higher engagement than text-only postings (Sabate et al., 2014). In the study of De Vries, Gensler, & Leeflang (2012) in various industries, videos had a stronger positive impact than photos on the number of likes. However, both had a negative impact on the number of comments. In contrast to the previously mentioned studies, Su,

Reynolds, & Sun (2015) found in their study in the hotel industry that pictures and videos reduced the number of likes and comments, but text-only postings increased both. According to that, Pletikosa Cvijikj & Michahelles (2013) suggest that different industries among other factors should be investigated in the future, which may explain contrary findings.

Table 3: Post-Type Overview

Author	Engagement	Text-only	Photo	Video	Industry
(De Vries et al., 2012)	Likes	n/a	+	++	Various
	Comments	n/a	-	-	
(Kim & Yang, 2017)	Likes	n/a	++	+	Various
	Comments	n/a	--	-	
(Pletikosa Cvijikj & Michahelles, 2013)	Likes	+	++	+	Food/ beverages
	Comments	++	++	-	
(Sabate et al., 2014)	Likes	n/a	++	++	Travel agencies
	Comments	-	+	n/a	
(Su et al., 2015)	Likes	++	-	--	Hotels
	Comments	++	-	-	

Post Caption

Previous research indicates that the length of advertising messages may affect performance measures. That said, results from Sabate et al. (2014) showed that moderators should not be afraid of writing too many characters if this is necessary for a good understanding since larger postings increased the number of likes. For the number of comments, the length of the post was not significant. On the contrary, Schultz (2017) found that the post length negatively affects the number of likes and comments with an average post length of 196.4 characters. It is proposed to use a medium number of characters to drive the highest number of likes (Schultz, 2017). According to that, Sabate et al. (2014) explain many factors for contrary findings regarding this matter such as cultural differences or industry specificities.

Regarding call-to-actions in post descriptions, Swani, Milne, Brown, Assaf, & Donthu (2017) found out that direct-calls-to-purchase do not increase the popularity of postings, which indicates that users have little motivation to engage with content that emphasizes commercialism. However, this just may be the case for direct-calls-to-purchase not calls-to-action asking for comments or likes. On the contrary, Su, Reynolds, & Sun (2015) found that a call-to-action in form of a like request had a strong impact on the number of likes and a marginally positive impact on the number of comments. The call-to-action in form of questioning decreased the number of likes and increased the number of comments. Similar findings were presented by De Vries, Gensler, & Leeftang (2012), highly interactive questions had negative effects on the number of likes, but increased the number of comments significantly. The authors explain that a question cannot be answered by a like, but solely by posting a comment.

Incentives

In terms of extrinsic incentives, several scholars identified a positive impact on the number of likes and comments (De Vries et al., 2012; Schultz, 2017; Su et al., 2015). Su et al. (2015) found out that postings that include awards or discounts had a positive effect on the number of likes and comments. Supporting this study, De Vries et al. (2012) and Schultz (2017) identified that postings containing contests have a significant impact on the number of likes and comments. However, Pletikosa Cvijikj & Michahelles (2013) found partly contrasting findings: In their study remuneration had a negative impact on the number of likes. Nevertheless, the number of comments increased like in the previous mentioned studies.

Conclusion

The previously discussed studies have widely different findings for *Post Type* and *Post Caption*. It seems like the contrary findings depend on a variety of factors such as cultural differences or industry specificities (Sabate et al., 2014), which indicates opportunity for future research. Regarding *Incentives*, the findings were mostly similar. However, some results can be used to create recommendations for action and are concluded with other parts of the literature review as a consolidated framework in the next chapter.

2.5 The Framework and Conclusion

Following the literature review, the researcher realized that startup innovation is driven by external knowledge, which is generated by the firm's relationships. Open innovation and value co-creation are two concepts that may help startups to build such relationships. Accordingly, social networks and the possibility to create postings can be one of the media to reach possible co-creation partners, build relationships and extract information. However, the existing literature offers too little managerial frameworks for companies, especially in the startup stage, that help engaging in co-creation processes (Lorenzo-Romero et al., 2014; Payne et al., 2008). Moreover, in social media, value co-creation for SME's is also yet to be explored (Bashir et al., 2017), although competence in both fields are important competitive factors for startups (Braojos-Gomez et al., 2015; Hitchen et al., 2017). Combined, these are the reasons why this work tries to create a framework for social media postings that increase the probability for user participation.

Framework For Implementing A Value Co-Creation Process In Social Media

Concluded from the literature review, the following framework offers companies guidance on how to implement co-creation of value using social media.

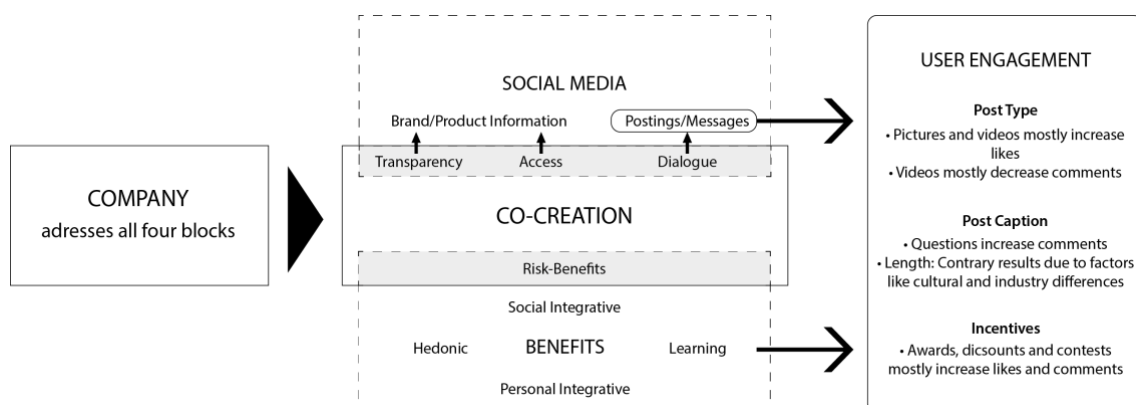


Figure 5: Implementing Co-Creation Using Social Media (Author's Elaboration)

The framework starts with the four blocks of the DART-Model: *Transparency*, *Access*, *Dialogue* and *Risk-Benefits*. The first three blocks are addressed by using social media, the latter is addressed using the U&G approach. The DART-Model was designed to help firms integrating co-creation processes in their daily business (Payne et al., 2008). Inside this model, consumers expect *Transparency* about company and product information. It is important that customers have the *Access* to the same level of *Transparency* as the firm does, meaning that it is crucial to get rid of the traditional information asymmetry (Prahalad & Ramaswamy, 2004). Companies may tackle this issue by creating a social media company profile, providing customers an extensive amount of brand and product information and starting a conversation with possible co-creators. This can also include the disclosure of risks, transparency of financial statements and open access and dialogue with customers (Prahalad & Ramaswamy, 2004). After giving customers *Access* and providing full *Transparency* to information, firms should initiate a *Dialogue* by publishing postings that are related to its co-creation purposes. Users that are potential co-creators can then interact with these postings in form of e. g. liking or commenting on it. By doing so, they may confirm a good product development with a 'like' or give suggestions in the comments on how to improve or change specific details. In this regard, companies can extract important information from their customers and customize their products to their customer wants.

The last block of the DART-Model, *Risk-Benefits*, reflects the risks that might occur when participating in co-creation, but also the benefits that customers seek while doing so (Prahalad & Ramaswamy, 2004). The risks are neglected in this model. However, the benefits are addressed by the U&G approach, which describes the benefits for customers that fulfil their wants and needs (Lorenzo-Romero et al., 2014) and which make them take part in the co-creation process. Companies should find out which of the following four different benefits work best for their market and address the chosen ones (Lorenzo-Romero et al., 2014; Nambisan & Baron, 2009):

- 1) *Learning benefits*: Refer to product-related learning and deepening the understanding and background knowledge.

- 2) *Social integrative benefits*: Refer to all positive feelings customers may experience in regard to relational and social bonds in their participation of developing new products or services.
- 3) *Personal integrative benefits*: Refer to all benefits that stem from gaining social status inside the social media platform and the enhancement of self-efficacy.
- 4) *Hedonic benefits*: Refer to the interest and pleasure that customers might receive, which make the whole co-creation experience mentally stimulating.

After the company found out what benefits work best for their community, the *Dialogue* can be started by creating a posting. Depending on how the posting is created the user engagement increases or decreases. Factors for that can be the *Post Type*, *Post Caption* and *Incentives*. The literature review showed that findings in these fields mostly varied throughout different researchers due to several factors like other industry specifications. However, this framework will give recommendations based on specific findings that corresponded predominantly. The *Post Type* defines whether the posting includes a picture, a video or just plain text. Pictures and videos mostly increased the number of likes on a posting, whereas videos mostly decreased the number of comments (De Vries et al., 2012; Kim & Yang, 2017; Pletikosa Cvijikj & Michahelles, 2013; Sabate et al., 2014; Su et al., 2015). In regards to the *Post Caption*, research showed that questions increase the number of comments (De Vries et al., 2012; Su et al., 2015). Nevertheless, there are contrary findings regarding the length of the caption. *Incentives* refer to all extrinsic stimulus. The findings imply that awards, discounts and contests mostly increase the number of both likes and comments (De Vries et al., 2012; Pletikosa Cvijikj & Michahelles, 2013; Schultz, 2017; Su et al., 2015).

Based on this consolidated framework, companies can customize their actions for their market and create postings with specific desired outcomes. The recommendations for action are concluded from the existing literature and may vary due to various factors like industry specifications. To prove or reject such recommendations, this work's research focusses on some aspects in the following chapter.

3 Research

3.1 Methodology

3.1.1 Research Question & Hypotheses

Following the conducted literature review and the consolidated framework, the main research question is as follows:

How should a startup company create social media postings to increase the engagement of value co-creation projects?

The studies that were found in chapter 2.4 User Engagement in Social Media regarding the creation of postings aim at specific industries and general call to actions, disregarding the specific information extraction that is needed for value co-creation. This lack of reference to value co-creation and the analysis of existing literature in chapter 2.4 result in hypotheses H5, H6, H7, H8 and H9. Hypotheses H1, H2, H3 and H4 aim to validate the concept of open innovation, value co-creation, the DART-Model and the U&G approach from a customer perspective. Table 4 shows from what topics and authors the ten hypotheses derived:

Table 4: Hypotheses Overview (Author's Elaboration)

Hypothesis	Topic	Developed from
H1	Open Innovation: Concept	Chesbrough, 2006; Hitchen et al., 2017; Spender et al., 2017; Von Hippel, 2005
H2	Value co-creation: Concept:	Payne et al., 2008; Prahalad & Ramaswamy, 2004
H3	Value co-creation: DART-Model	Payne et al., 2008; Prahalad & Ramaswamy, 2004
H4	Value co-creation: U&G approach	Lorenzo-Romero et al., 2014; Nambisan & Baron, 2009
H5	User Engagement:	De Vries et al., 2012; Kim & Yang, 2017;

H6	Post type	Pletikosa Cvijikj & Michahelles, 2013; Sabate et al., 2014; Su et al., 2015
H7	User Engagement: Post caption: Length	Sabate et al., 2014; Schultz, 2017
H8	User Engagement: Call-to-action	De Vries et al., 2012; Su et al., 2015; Swani et al., 2017
H9	User Engagement: Incentives	De Vries et al., 2012; Pletikosa Cvijikj & Michahelles, 2013; Schultz, 2017; Su et al., 2015

Open Innovation

Several authors described the concept of open innovation and the importance for companies, in particular for startups (Chesbrough, 2006; Hitchen et al., 2017; Spender et al., 2017; Von Hippel, 2005). However, the reviewed literature solely described the company's perspective regardless of any customer point of view. Hypothesis H1 wants to focus on that issue:

H1: Customers welcome an open innovation approach inside companies.

Value co-creation

The same as for open innovation, the concept of value co-creation and its relevance for firms take a company-based view and seem to disregard the verification for customers (Payne et al., 2008; Prahalad & Ramaswamy, 2004). Hypothesis H2 focusses on that matter:

H2: Customers would like to help companies in creating new products or services.

The DART-Model can help firms to integrate the co-creation process in their daily business and builds a basis for the interaction between the firm and the customer on different levels. It is intensively described and its importance is emphasized by other authors (Payne et al., 2008; Prahalad & Ramaswamy, 2004).

Nevertheless, the customer perspective is again disregarded, which is tested in hypothesis H3:

H3: All blocks of the DART-Model are important for customers.

The U&G approach assumes that consumers use traditional media to fulfil their wants and needs and includes different benefits for such individuals. The reviewed studies found out that all benefits significantly influence the customer's participation in co-creation efforts (Lorenzo-Romero et al., 2014; Nambisan & Baron, 2009). What benefit influenced the participation rate the most was however disregarded. Hypothesis H4 tests this matter independently of any industry.

H4: U&G approach: Learning benefits are the most important motivators for customers.

User Engagement

Post Type

Several authors (De Vries et al., 2012; Kim & Yang, 2017; Pletikosa Cvijikj & Michahelles, 2013; Sabate et al., 2014; Su et al., 2015) examined the influence of the different post types *Pictures*, *Video* and *Text-only* posts. Their findings were not consistent due to factors like different industry specifications and just focused on general engagement. Hypotheses H5 and H6 try to clarify industry-independently what post type has the biggest influence specifically on co-creation.

H5: Postings with pictures increase the probability for users to participate more than videos.

H6: Postings with nothing but plain text decrease the probability for users to participate.

Post Caption

Research that relates to the length of the post caption concluded contrary findings among authors (Sabate et al., 2014; Schultz, 2017). Hypothesis H7 focusses on clarifying this issue:

H7: Postings with a text description that is longer than 3 sentences decrease the probability for users to participate.

Authors researching call-to-actions in social media posts generally found out that non-commercial call-to-actions caused the wished positive impact on user engagement, call-to-purchases on the other hand had a negative impact. Hypothesis H8 focusses on verifying non-commercial call-to-actions:

H8: Postings that include a call to action, increase the probability for users to participate.

Incentives

In terms of including extrinsic incentives in social media postings, the findings of the reviewed literature corresponded predominantly: Incentives increase the number of likes and comments. Only one study found that remuneration had a negative impact on the number of likes (De Vries et al., 2012; Pletikosa Cvijikj & Michahelles, 2013; Schultz, 2017; Su et al., 2015). Hypothesis H9 focusses on verifying this matter:

H9: Postings that include extrinsic incentives increase the probability for users to participate.

3.1.2 Research Design

To fulfill the objectives of this dissertation, a quantitative research approach was chosen. The main characteristic of quantitative research is that its outcomes are highly measurable and quantifiable and therefore it is appropriate for larger sample sizes. The data is collected in form of numbers and statistics and can be used to generalize concepts or predict future results. The overall aim is to classify different features and to construct statistical models in order to explain what is observed (USCLibraries, 2018).

3.1.3 Data Collection

From the topic and the research question, it is obvious that the research needs to be undertaken online. Since most hypothesis refer to social media and its usage, users of such networks should be included in the research. Therefore, this work uses an online survey. In survey research, a standardized questionnaire is administered to a selected sample (The Writing Studio, n. d. a). In this case, the survey is distributed via email through the faculty's email server to 8513 students. Typical advantages for this kind of research are cost-savings due to the elimination of postal fees, faster transmission times and ease of analysis (The Writing Studio, n. d. b). In order to increase the number of participants, three 50 Euro Amazon gift cards were raffled among all contestants.

A fully structured online survey was created in www.kwiksurveys.com including 30 questions. The questions included 24 Likert scales, one multiple choices, one order ranking and four personal questions. A sample for the Likert scale with rankings from '1 Strongly Disagree' to '5 Strongly Agree' can be seen in Figure 6. The detailed survey is presented in the appendix in subchapter 7.1 Online Survey.

5* Social media is the best way for companies to communicate with me.



Figure 6: Sample for Likert Scale

3.1.4 Data Analysis

For analysis, the data set was first prepared in Microsoft Excel for the import to IBM SPSS statistics. In SPSS, the following methods were used depending on each item to analyze the data:

- Frequency tables
- Means
- Contingency tables (cross frequency tables)
- T-test

For all categorical variables frequency tables and their means were used to assess the data. In one case the comparison of two variables, frequency tables and means were not enough. A t-test was performed, which included the correlation of both variables and the significance (p-value) in their different rating. Moreover, for some items, it was important to summarize the relationship between each variable which was done by using contingency tables. For statistical comparison of two groups a p-value of $<0,05$ was set as statistically significant.

After the analysis and with the gained insights, the hypotheses were able to be tested and were either sustained or rejected.

3.1.5 Description of Sample

969 participants have started the survey, but just 830 (85,7%) of them completed it. Only participants that completed the survey were analyzed.

Since the distribution of the survey was done through the faculty's mailing server, we can see in Figure 7 that the majority of the participants were under 25 years old (84.9%). Under 18 years old accounted for circa 1.2%, 18 – 24 years olds for 83.7%, 25 – 34 year olds for 13.1%, 35 – 44 year olds for 1.6% and 45 – 54 year olds for only 0.4%.

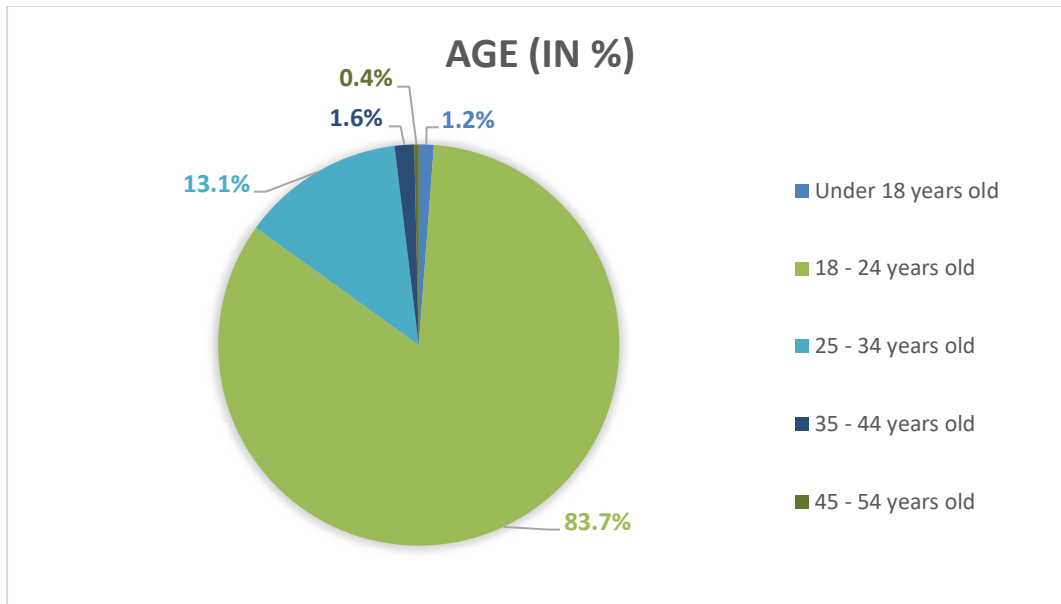


Figure 7: Age (in %)

In Figure 8, we can see that the sample consists of 72% male and 28% female participants:

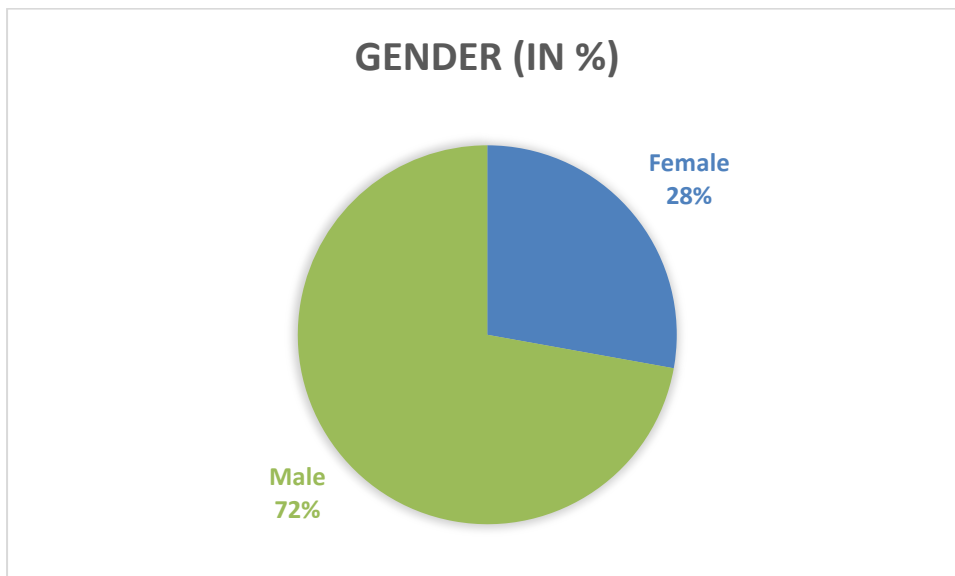


Figure 8: Gender (in %)

Figure 9 shows the nationality of the participants: There was a total of 26 nationalities. Portugal accounted for 89%, Brazil for 6%. The rest were summarized in the category 'Others' due the smallness of the other nationalities.

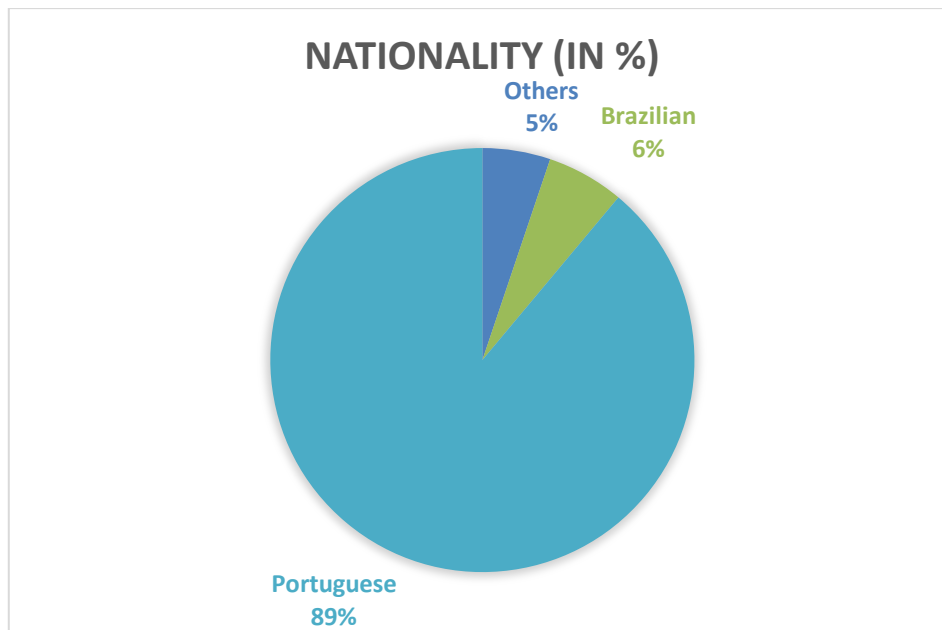


Figure 9: Nationality (in %)

In terms of education, Figure 10 shows that the sample consisted of 47% that had no schooling completed, 28% had a high school diploma, 23% a bachelor's degree, 1% a master's degree and 1% a professional degree.

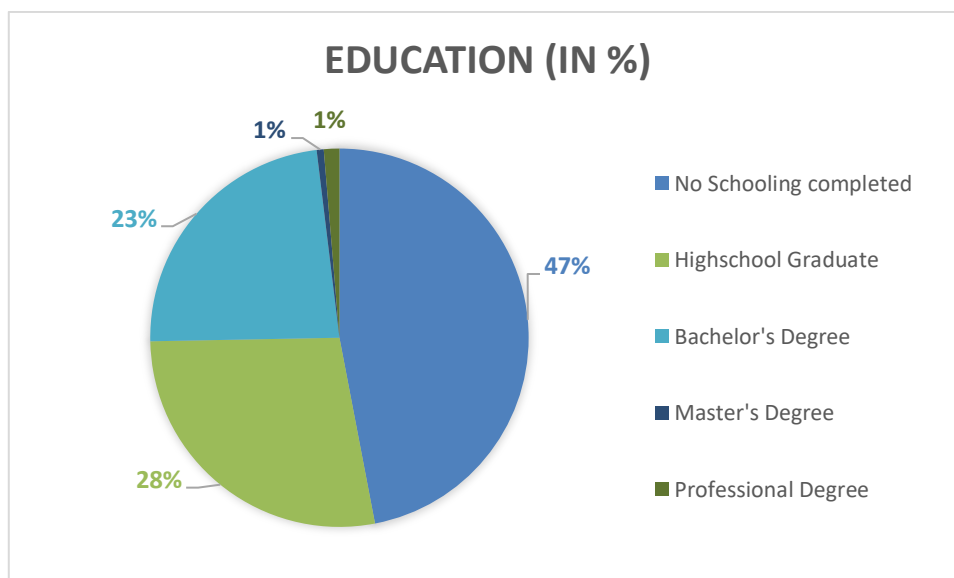


Figure 10: Education (in %)

The social media usage of the participants is consistent with the most popular social networks from Statista (2018). Elaborated in Table 5 with Facebook

being the most used, followed by YouTube, Instagram, Tumblr, Reddit, Twitter, LinkedIn, Snapchat and Pinterest being the least used.

Table 5: Social Media Usage

	1	2	3	4	5	6	7	8	9
Facebook	416	177	150	50	23	8	4	4	4
YouTube	170	387	196	64	14	2	1	2	0
Instagram	177	183	281	71	49	32	28	8	7
Tumblr	1	7	13	201	135	148	117	112	102
Reddit	48	37	61	91	243	115	104	65	72
Twitter	15	23	47	97	125	287	133	72	37
LinkedIn	7	16	63	146	82	81	289	97	55
Snapchat	1	3	11	68	92	90	97	369	105
Pinterest	1	3	14	48	73	73	63	107	454

4 Presentation of Results

In this chapter the results from the survey are analyzed and presented. For that purpose, the hypotheses are tested with the help of Microsoft Excel and IBM SPSS Statistics. Afterwards the results of this work are discussed with the findings of the literature review. On basis of this discussion recommendations for action are formed.

4.1 Hypothesis Testing

The following shows the testing of each hypothesis of the topics *Open Innovation*, *Value Co-Creation*, *Post Type*, *Post Caption* and *Incentives* that are stated in 3.1.1 Research Question & Hypotheses. Based on the results, hypotheses are either sustained or rejected.

4.1.1 *Open Innovation*

H1: Customers welcome an open innovation approach inside companies.

Regarding hypothesis H1, we can see in Table 6 that three out of four participants chose the two highest options towards 'Strongly Agree' for companies to partly open their innovation activities to the public. Often, the top two options are considered a tendency towards agreeing to the presented phrase. This work adopts this approach. The tendency towards agreeing is supported in Table 7 with a mean of 3,99 and therefore sustains the hypothesis H1: Customers welcome an open innovation approach inside companies.

Table 6: Companies and Open Innovation – Frequency Table (H1)**Companies should partly open their innovation activities to the public.**

		Count	Percent
Valid	1 Strongly disagree	9	1,1
	2	27	3,3
	3	152	18,3
	4	419	50,5
	5 Strongly agree	223	26,9
	Total	830	100,0

Table 7: Companies and Open Innovation – Mean (H1)

Mean				
N	Minimum	Maximum	Mean	Standard Deviation
830	1	5	3,99	0,825

Since the reviewed literature solely described the concept from a company's perspective, this work proved that customer also validate the approach of open innovation.

4.1.2 Value Co-Creation

H2: Customers would like to help companies in creating new products or services.

With the same reasoning as for hypothesis H1, this dissertation considers the top two categories towards 'Strongly Agree' as an agreement to the phrase. In Table 8, we can observe that with a 70% agreement and a mean of 3,91 (see Table 9) that goes in the direction of '5 Strongly Agree', hypothesis H2 is sustained: Customers would like to help companies in creating new products or services.

Table 8: User Willingness for Co-Creation – Frequency Table (H2)

I would like to help companies creating new products or services.

		Count	Percent
Valid	1 Strongly disagree	13	1,6
	2	48	5,8
	3	188	22,7
	4	335	40,4
	5 Strongly agree	246	29,6
	Total	830	100,0

Table 9: User Willingness for Co-Creation – Mean (H2)

Mean				
N	Minimum	Maximum	Mean	Standard Deviation
830	1	5	3,91	0,942

Since the reviewed literature solely described the value co-creation from a firm's view, this work proved that customer would participate in such activities.

H3: All blocks of the DART-Model are important for customers.

For hypothesis H3, all of its four blocks were tested. For 'dialogue', the usage of social media was tested in regards to the developed framework.

The first block that was tested referred to 'Access', whether companies should allow customers access to certain information, in which circa 64% of the participants chose the top two categories (Table 10), which concludes to a mean of 3,77 in Table 11. Therefore, 'Access' can be seen as an important part of the model.

Table 10: Companies Allowing Access to Internal Information – Frequency Table (H3)

Companies need to allow me access to product and brand information for me to participate in a conversation about new products or services.

		Count	Percent
Valid	1 Strongly disagree	15	1,8
	2	58	7,0
	3	221	26,6
	4	341	41,1
	5 Strongly agree	195	23,5
	Total	830	100,0

Table 11: Companies Allowing Access to Internal Information – Mean (H3)

N	Mean		Mean	Standard Deviation
	Minimum	Maximum		
830	1	5	3,77	0,945

In Table 12 the top two options for block 'Transparency', regarding the company's transparency of information and activities, were chosen by circa 74% with again a high mean of 4,02 in Table 13, which also makes this block an important part of the model.

Table 12: Companies Providing Transparency – Frequency Table (H3)

Companies need to be transparent with all information and activities for me to participate in a conversation about new products or services.

		Count	Percent
Valid	1 Strongly disagree	11	1,3
	2	60	7,2
	3	140	16,9
	4	312	37,6
	5 Strongly agree	307	37,0
	Total	830	100,0

Table 13: Companies Providing Transparency – Mean (H3)

N	Mean			
	Minimum	Maximum	Mean	Standard Deviation
830	1	5	4,02	0,974

In terms of the importance of 'Benefits' for participation in co-creation processes, we can observe in Table 14 a 68% acceptance and a 3,86 mean (Table 15), which make it important in this work. Exact data can be seen in Table 14 and Table 15 below:

Table 14: Companies Offering Benefits for Co-Creation – Frequency Table (H3)

Benefits are important for me when participating in a conversation about new products or services.

		Count	Percent
Valid	1 Strongly disagree	11	1,3
	2	41	4,9
	3	204	24,6
	4	368	44,3
	5 Strongly agree	206	24,8
	Total	830	100,0

Table 15: Companies Offering Benefits for Co-Creation – Mean (H3)

N	Mean			
	Minimum	Maximum	Mean	Standard Deviation
830	1	5	3,86	0,891

For entering the block 'Dialogue', social media was chosen and tested as seen in Table 16 and Table 17. Since circa 55% chose the top two answers, we can namely see a tendency towards an agreement on social media as the best way for communication (Table 16). This trend is support in Table 17 with a mean of 3,57. Based on this tendency, we can therefore see 'Dialogue' in form of social media as an important block.

Table 16: Social Media As The Best Way For Communication – Frequency Table (H3)

Social media is the best way for companies to communicate with me.

		Count	Percent
Valid	1 Strongly disagree	40	4,8
	2	90	10,8
	3	239	28,8
	4	283	34,1
	5 Strongly agree	178	21,4
	Total	830	100,0

Table 17: Social Media As The Best Way For Communication – Mean (H3)

Mean				
N	Minimum	Maximum	Mean	Standard Deviation
830	1	5	3,57	1,087

Emphasizing the previous results, looking at Table 18 all blocks and their mean of 3.8 (SD=0.6), the findings also yield a tendency towards the agreement with all four questions on average. Hence, hypothesis H3 can be confirmed.

Table 18: Importance Of The DART-Model – Mean Of All Blocks (H3)

Mean of all blocks		
H3		
N	Valid	830
	Missing	0
Mean		3,8051
Median		3,8750
Standard Deviation		0,62653
Range		4,00
Minimum		1,00
Maximum		5,00

The reviewed literature described the concept of the DART-Model detailed, but never validated that customers actually need all blocks. Hypothesis H3 sustained this matter.

H4: U&G approach: Learning benefits are the most important motivators for customers.

In a multiple choice question the four benefits of the U&G approach were tested including a denying answering option. Multiple answers were possible per participant. In Figure 11, we can see that option one 'learning benefits' were chosen by 57%, option two 'social integrative benefits' by 24.8%, option three 'personal integrative benefits' by 34.7% and option four 'hedonic benefits' by 41.7%. Therefore, we can sustain hypothesis H4: Learning benefits are the most important motivators for customers. However, option five showed that 18.1% of all participants most likely would not engage with such postings even though the benefits they personally chose to be important were included.

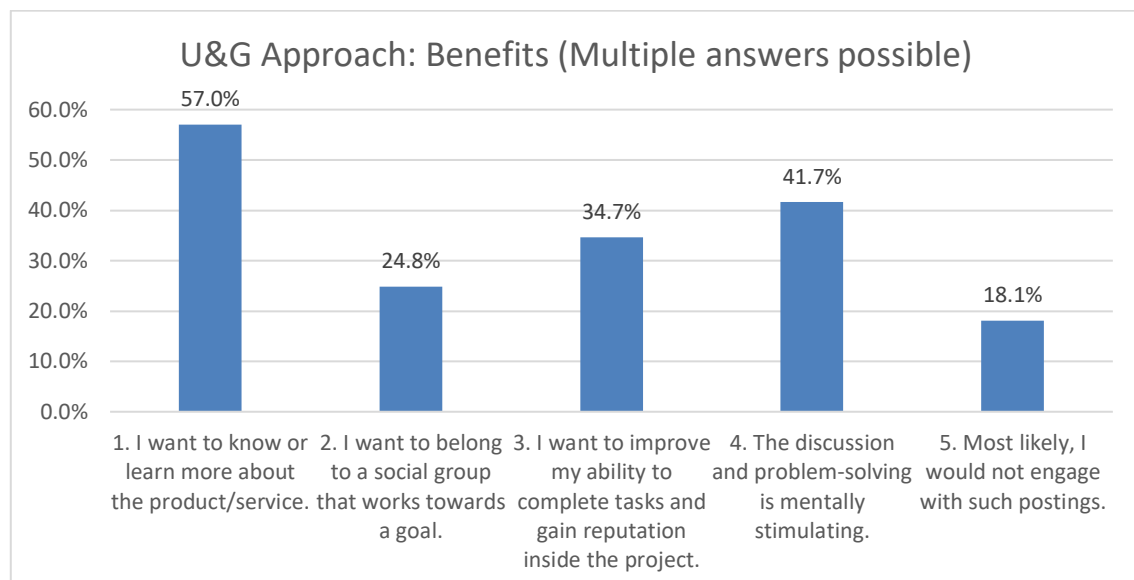


Figure 11: U&G Approach And The Importance of Its Benefits (H4)

Studies that used the U&G approach before for co-creation worked industry-specific and did not pursue identifying the most important benefit. This work focused on these gaps.

4.1.3 Post Type

H5: Postings with pictures increase the probability for users to participate more than videos.

For hypothesis H5, it was tested whether pictures get more likes or comments than videos. In both, the like (Table 19) and comment (Table 21) question, whether participants prefer pictures over videos regarding liking and commenting, the participants answered most the middle option “3”, which leads to the assumption that most participants do not prefer either. However, looking at the means of both questions, we can observe for the like model a tendency towards agreeing with a mean of 3,33 (Table 20) and for the comment model a tendency towards disagreeing with a mean of 2,81 (Table 22).

Table 19: Number of Likes on Pictures vs. Videos – Frequency Table (H5)

I rather ‘like’ pictures than videos in social media.

		Count	Percent
Valid	1 Strongly disagree	89	10,7
	2	94	11,3
	3	271	32,7
	4	203	24,5
	5 Strongly agree	173	20,8
	Total	830	100,0

Table 20: Number of Likes on Pictures vs. Videos – Mean (H5)

		Mean		Standard Deviation
N	Minimum	Maximum	Mean	
830	1	5	3,33	1,229

Table 21: Number of Comments on Pictures vs. Videos – Frequency Table (H5)

I rather write more comments on pictures than on videos.

		Count	Percent
Valid	1 Strongly disagree	163	19,6
	2	115	13,9
	3	339	40,8
	4	143	17,2
	5 Strongly agree	70	8,4
	Total	830	100,0

Table 22: Number of Comments on Pictures vs. Videos – Mean (H5)

N	Mean			
	Minimum	Maximum	Mean	Standard Deviation
830	1	5	2,81	1,183

Looking in the like model, we can see that participants chose the top two answers with 66% for pictures (Table 23) and 60% for videos (Table 25). This means pictures get slightly more liked by the participants, which is supported by the higher mean of pictures with 3,81 (Table 24) compared to videos with 3,62 (Table 26).

Table 23: Likes on Pictures – Frequency Table (H5)

I 'like' pictures in social media.

		Count	Percent
Valid	1 Strongly disagree	54	6,5
	2	70	8,4
	3	152	18,3
	4	261	31,4
	5 Strongly agree	293	35,3
	Total	830	100,0

Table 24: Likes on Pictures – Mean (H5)

N	Minimum	Mean		Standard Deviation
		Maximum	Mean	
830	1	5	3,81	1,193

Table 25: Likes on Videos – Frequency Table (H5)

I 'like' videos in social media.

		Count	Percent
Valid	1 Strongly disagree	68	8,2
	2	84	10,1
	3	182	21,9
	4	256	30,8
	5 Strongly agree	240	28,9
	Total	830	100,0

Table 26: Likes on Videos – Mean (H5)

N	Minimum	Mean		Standard Deviation
		Maximum	Mean	
830	1	5	3,62	1,229

Regarding the comment model, we can see that 60% disagree with writing comments on pictures (Table 27) and 64% disagree with writing comments on videos (Table 29). Therefore, there is a tendency that participants write slightly less comments on videos than on pictures, which is supported by the lower mean of 2,23 for videos (Table 30) compared to 2,35 for pictures (Table 28).

Table 27: Comments on Pictures – Frequency Table (H5)

I write comments on pictures.

		Count	Percent
Gültig	1 Strongly disagree	217	26,1
	2	283	34,1
	3	187	22,5
	4	109	13,1
	5 Strongly agree	34	4,1
	Total	830	100,0

Table 28: Comments on Pictures – Mean (H5)

N	Minimum	Mean		Standard Deviation
		Maximum	Mean	
830	1	5	2,35	1,123

Table 29: Comments on Videos – Frequency Table (H5)

I write comments on videos.

			Count	Percent
Valid	1 Strongly disagree		272	32,8
	2		260	31,3
	3		167	20,1
	4		101	12,2
	5 Strongly agree		30	3,6
	Total		830	100,0

Table 30: Comments on Videos – Mean (H5)

N	Minimum	Mean		Standard Deviation
		Maximum	Mean	
830	1	5	2,23	1,137

Going deeper, a t-test was performed for questions 8 and 11, which describe the willingness to like or comment on pictures and for questions 9 and 12, which describe the same for videos. The descriptive mean value for pictures is 3,0777 and 2,9235 for videos and can be seen in Table 31.

Table 31: Mean Values for the Engagement on Pictures vs. Videos (H5)

Descriptive mean values					
		Mean	N	Standard deviation	Standard error of the mean
Pair 1	H5_pic	3,0777	830	0,95637	0,03320
	H5_vid	2,9235	830	0,97520	0,03385

The correlation of both variables is high with 0,822, which means the higher the value for H5_pic (engagement on pictures), the higher the value for H5_vid (engagement on videos). Elaborated in Table 32.

Table 32: Correlation between the Engagement on Pictures vs. Videos (H5)

		Correlation for paired samples		
		N	Correlation	Significance
Pair 1	H5_pic & H5_vid	830	0,822	0,000

In Table 33, we can see the p-value (Sig. (2-sided)) that gives us information about the statistical significance. Since the value is $<0,05$, the difference in means is statistically significant. Hence, there is a stronger agreeing towards liking and commenting on pictures than there is on videos. Therefore, hypothesis H5 is sustained.

Table 33: Test for Paired Samples for the Engagement on Pictures vs. Videos (H5)

		Test for paired samples							
		Paired differences							
		Mean	Standard deviation	Standard error of the mean	95% confidence interval of the difference		T	df	Sig. (2-sided)
					Lower	Upper			
Pair 1	H5_pic - H5_vid	0,15422	0,57727	0,02004	0,11489	0,19355	7,696	829	0,000

Comparing the results with the literature, we can observe that Kim & Yang (2017) and Pletikosa Cvijikj & Michahelles (2013) found equal results to our like model: In both studies they found that pictures have a stronger positive impact on the number of likes than videos. De Vries et al. (2012) found the opposite, videos have a stronger positive impact than pictures. Sabate et al. (2014) identified that both post types have a similar impact on likes and Su et al. (2015) found a negative impact for both variables. Concluded the results of this work integrate well with previous findings from the reviewed literature. As previously mentioned differences may appear due to different industries. This work focused on industry independency.

H6: Postings with nothing but plain text decrease the probability for users to participate.

For H6, we can see that both for likes (Table 34) and comments (Table 36), participants answered most with “3”, which leads to the assumption that most participants do not prefer either. However, regarding the mean values, there is in both the like, mean of 2,7 (Table 35), and the comment model, mean of 2,51 (Table 37), a disagreeing tendency towards liking and commenting on postings with nothing but text. This is supported by Table 38, which shows the mean value of 2.6 for both variables combined, which indicates a negative tendency on engagement. Therefore, hypothesis H6 is sustained: Postings with nothing but plain text decrease the probability for users to participate.

Table 34: Likes on Text-Only Postings – Frequency Table (H6)

I 'like' postings with nothing but text.

		Count	Percent
Valid	1 Strongly disagree	185	22,3
	2	179	21,6
	3	226	27,2
	4	176	21,2
	5 Strongly agree	64	7,7
	Total	830	100,0

Table 35: Likes on Text-Only Postings – Mean (H6)

Mean				
N	Minimum	Maximum	Mean	Standard Deviation
830	1	5	2,70	1,242

Table 36: Comments on Text-Only Postings – Frequency Table (H6)

I write comments on postings with nothing but text.

		Count	Percent
Valid	1 Strongly disagree	213	25,7
	2	209	25,2
	3	229	27,6
	4	129	15,5
	5 Strongly agree	50	6,0
	Total	830	100,0

Table 37: Comments on Text-Only Postings – Mean (H6)

N	Minimum	Mean		Standard Deviation
		Maximum	Mean	
830	1	5	2,51	1,199

Table 38: Mean Value for the Total Engagement on Text-Only Postings (H5)

Mean value of both variables		
H6		
N	Valid	830
	Missing	0
Mean		2,6078
Median		2,5000
Standard deviation		1,04691
Range		4,00
Minimum		1,00
Maximum		5,00

Comparing these results with the reviewed literature, we can see that Pletikosa Cvijikj & Michahelles (2013) and Su et al. (2015) found contrary results. In their studies text-only postings had a positive impact on both the number of likes and comments. Only Sabate et al. (2014) found a negative impact on the number of comments. However, different industry characteristics may explain contrary findings.

4.1.4 Post Caption

H7: Postings with a text description that is longer than 3 sentences decrease the probability for users to participate.

For hypothesis H7, two contingency tables were created. All percentages refer to the total sample size of 830. In Table 39, we can observe the highest box with 15.4% that participants read descriptions that are longer than three sentences and also need to read these in order to ‘like’ a posting. The same occurs in

Table 40, the highest box with 17.6% says that participants read descriptions that are longer than three sentences and also need to read these in order to comment on a posting. Therefore, hypothesis H7 can be rejected: Postings with

a text description that is longer than 3 sentences do not decrease the probability for users to participate.

Table 39: Likes Based on Posting Descriptions – Contingency Table (H7)

Contingency Table - Likes								
			I 'like' postings regardless of their description.					
			1 Strongly disagree	2	3	4	5 Strongly agree	Total
I do not read posting descriptions that are longer than 3 sentences.	1 Strongly disagree	Amount	128	35	39	19	9	230
		% of total	15,4%	4,2%	4,7%	2,3%	1,1%	27,7%
	2	Amount	78	67	68	40	5	258
		% of total	9,4%	8,1%	8,2%	4,8%	0,6%	31,1%
	3	Amount	45	42	68	32	8	195
		% of total	5,4%	5,1%	8,2%	3,9%	1,0%	23,5%
	4	Amount	24	24	29	23	5	105
		% of total	2,9%	2,9%	3,5%	2,8%	0,6%	12,7%
	5 Strongly agree	Amount	5	7	8	8	14	42
		% of total	0,6%	0,8%	1,0%	1,0%	1,7%	5,1%
Total		Amount	280	175	212	122	41	830
		% of total	33,7%	21,1%	25,5%	14,7%	4,9%	100,0%

Table 40: Comments Based on Posting Descriptions – Contingency Table (H7)

Contingency Table - Comments								
			I comment on postings regardless of their description.					
			1 Strongly disagree	2	3	4	5 Strongly agree	Total
I do not read posting descriptions that are longer than 3 sentences.	1 Strongly disagree	Amount	146	34	35	8	7	230
		% of total	17,6%	4,1%	4,2%	1,0%	0,8%	27,7%
	2	Amount	97	69	62	25	5	258
		% of total	11,7%	8,3%	7,5%	3,0%	0,6%	31,1%
	3	Amount	61	45	56	25	8	195
		% of total	7,3%	5,4%	6,7%	3,0%	1,0%	23,5%
	4	Amount	34	16	20	27	8	105
		% of total	4,1%	1,9%	2,4%	3,3%	1,0%	12,7%
	5 Strongly agree	Amount	11	4	9	6	12	42
		% of total	1,3%	0,5%	1,1%	0,7%	1,4%	5,1%
Total		Amount	349	168	182	91	40	830
		% of total	42,0%	20,2%	21,9%	11,0%	4,8%	100,0%

Comparing these results with the findings from previous research, we can see that it is in line with the findings of Sabate et al. (2014), who implied that larger postings increase the number of likes. On the other hand, Schultz (2017) found that post length negatively affects the engagement. However, Sabate et al. (2014) emphasizes that contrary findings may appear due to e. g. cultural differences.

H8: Postings that include a call to action, increase the probability for users to participate.

Regarding call to actions, the survey checked for three variables: Questions in the description, demands for likes in the description and demands for comments in the description.

In Table 41, whether participants like to answer questions in the description of a posting, we can see that the majority of all participants chose the middle option “3”, which may lead to the assumption that most participants did not know whether they agree or disagree with this statement. The mean of 2,56 in Table 42 however shows a tendency towards disagreeing with answering questions in the description of a posting.

Table 43 shows that 2 of 3 participants would not comment on demand, which is supported by the low mean of 2,05 in Table 44 and therefore means that this variable is rejected.

In Table 45, participants were demanded to ‘like’ a posting, 70% disagreed with this statement, which results in a low mean of 1,93 (Table 46) and consequently means this variable is also rejected.

Combining now all three variables in Table 47 and calculating the mean value of 2,1771 for all three variables, hypothesis H8 can be rejected: Postings that include a call to action, do not increase the probability for users to participate.

Table 41: Effect of Questions in Descriptions on the Number of Comments – Frequency Table (H8)

I like to answer questions in the description of a posting.

		Count	Percent
Valid	1 Strongly disagree	213	25,7
	2	177	21,3
	3	248	29,9
	4	149	18,0
	5 Strongly agree	43	5,2
	Total	830	100,0

Table 42: Effect of Questions in Descriptions on Comments – Mean (H8)

		Mean		
N	Minimum	Maximum	Mean	Standard Deviation
830	1	5	2,56	1,197

Table 43: Effect of Demand for Comments in Descriptions on the Number of Comments – Frequency Table (H8)

Descriptions that demand me to comment on a posting make me do so.

		Count	Percent
Valid	1 Strongly disagree	376	45,3
	2	173	20,8
	3	171	20,6
	4	86	10,4
	5 Strongly agree	24	2,9
	Total	830	100,0

Table 44: Effect of Demand for Comments in Descriptions on the Number of Comments – Mean (H8)

		Mean		
N	Minimum	Maximum	Mean	Standard Deviation
830	1	5	2,05	1,155

Table 45: Effect of Demand for Likes in Descriptions on the Number of Likes – Frequency Table (H8)

Descriptions that demand me to 'like' a posting make me do so.

		Count	Percent
Valid	1 Strongly disagree	429	51,7
	2	163	19,6
	3	136	16,4
	4	73	8,8
	5 Strongly agree	29	3,5
	Total	830	100,0

Table 46: Effect of Demand for Likes in Descriptions on the Number of Likes – Mean (H8)

		Mean		
N	Minimum	Maximum	Mean	Standard Deviation
830	1	5	1,93	1,159

Table 47: Effect of Call-to-Action in Descriptions on the Engagement – Mean (H8)

Mean value of all 3 variables

H9

N	Valid	830
	Missing	0
Mean		2,1771
Median		2,0000
Standard deviation		0,99662
Range		4,00
Minimum		1,00
Maximum		5,00

The previously reviewed literature found mainly contrary findings. De Vries et al. (2012) found that like request inside descriptions strongly increase the number of likes. In terms of questions inside descriptions, De Vries et al. (2012) and Su et al. (2015) both found that the number of comments increased significantly. These contrary findings may exist due to differences in industry or target market.

4.1.5 Incentives

H9: Postings that include extrinsic incentives increase the probability for users to participate.

In Table 48, participants mostly answered “3” whether they like to participate in contests. Upper and lower answers are also balanced, which leads to the assumption that participants did not know whether they like to participate in contests or not. However, in Table 49, we can see a mean of 2,95, which indicates a slight tendency towards disagreeing. In terms of engagement for winning something, participants chose with over 50% the top two answering options for liking to win (Table 50) and with 47% the top options for commenting to win (Table 52), which indicate a tendency towards agreeing. This is supported by their means of 3,41 (Table 51:) and 3,25 (Table 53:). Combining both variables in Table 54 results in a mean value of 3.3271, which underlines the tendency towards agreeing. Based on the found tendencies on agreeing, H9 is sustained: Postings that include extrinsic incentives increase the probability for users to participate.

Table 48: User Participation in Contests – Frequency Table (H9)

I like to participate in contests on social media.

		Count	Percent
Valid	1 Strongly disagree	135	16,3
	2	152	18,3
	3	245	29,5
	4	212	25,5
	5 Strongly agree	86	10,4
	Total	830	100,0

Table 49: User Participation in Contests – Mean (H9)

Mean				
N	Minimum	Maximum	Mean	Standard Deviation
830	1	5	2,95	1,226

Table 50: Possibility to Win Something Affecting the Number of Likes – Frequency Table (H9)

I 'like' postings, if I have the chance to win something by doing so.

		Count	Percent
Valid	1 Strongly disagree	89	10,7
	2	110	13,3
	3	191	23,0
	4	253	30,5
	5 Strongly agree	187	22,5
	Total	830	100,0

Table 51: Possibility to Win Something Affecting the Number of Likes – Mean (H9)

		Mean		Standard Deviation
N	Minimum	Maximum	Mean	
830	1	5	3,41	1,266

Table 52: Possibility to Win Something Affecting the Number of Comments – Frequency Table (H9)

I comment on postings, if I have the chance to win something by doing so.

		Count	Percent
Valid	1 Strongly disagree	121	14,6
	2	115	13,9
	3	205	24,7
	4	217	26,1
	5 Strongly agree	172	20,7
	Total	830	100,0

Table 53: Possibility to Win Something Affecting the Number of Comments – Mean (H9)

		Mean		Standard Deviation
N	Minimum	Maximum	Mean	
830	1	5	3,25	1,324

Table 54: Possibility to Win Something Affecting the Total Engagement – Mean (H9)

Mean of Likes and Comments		
H9		
N	Valid	830
	Missing	0
Mean		3,3271
Median		3,5000
Standard deviation		1,22963
Range		4,00
Minimum		1,00
Maximum		5,00

Previous studies found similar results regarding extrinsic incentives. In such manner, De Vries et al. (2012), Schultz (2017) and Su et al. (2015) found that incentives had an overall positive impact on the number of likes and comments. Only Pletikosa Cvijikj & Michahelles (2013) found a negative impact towards the number of likes, but positive impact for the number of comments.

4.2 Discussion and Recommendations for Action

In this chapter, the findings are discussed with previous literature. Subsequently, recommendations for actions are given based on the findings and the reviewed literature.

4.2.1 Discussion

From the hypotheses testing, several results were obtained. Some of the findings coincide and some differ with the reviewed literature from chapter 2. In Table 55 and the following paragraphs, the results from chapter 4.1 *Hypothesis Testing* are compared with chapter 2 *Literature Review*.

Table 55: Hypotheses Testing Results

No.	Hypothesis	Result
H1	Customers welcome an open innovation approach inside companies.	Sustained
H2	Customers would like to help companies in creating new products or services.	Sustained
H3	All blocks of the DART-Model are important for customers.	Sustained
H4	U&G approach: Learning benefits are the most important motivators for customers.	Sustained
H5	Postings with pictures increase the probability for users to participate more than videos.	Sustained
H6	Postings with nothing but plain text decrease the probability for users to participate.	Sustained
H7	Postings with a text description that is longer than 3 sentences decrease the probability for users to participate.	Rejected
H8	Postings that include a call to action, increase the probability for users to participate.	Rejected
H9	Postings that include extrinsic incentives increase the probability for users to participate.	Sustained

Open Innovation

The concept of open innovation was described by various authors (Chesbrough, 2006; Hitchen et al., 2017; Spender et al., 2017; Von Hippel, 2005) that emphasized importance for companies and often startups. Nevertheless, their elaborations targeted the companies themselves and neglected the customers' perspective. Hypothesis H1 validated this ignored matter, which is that customer do welcome an open innovation approach inside companies.

Value Co-Creation

Value co-creation, a rather young concept, was elaborated by several scholars (Payne et al., 2008; Prahalad & Ramaswamy, 2004), but again the description happened with a company-based perspective and neglected the customer view. For that reason, hypothesis H2 validated that customers would like to help companies in creating new products or services.

The first framework to integrate co-creation activities in daily business, the DART-Model, includes four blocks that theoretically should build the basis for such purposes. Nonetheless, the validation from a customer's perspective was not found in the reviewed literature (Payne et al., 2008; Prahalad & Ramaswamy, 2004). Hypothesis H3 tested this matter, which revealed that all blocks of the DART-Model are important to customers.

The U&G approach describes that customers use media to fulfil their wants and needs. It includes different benefits, which were used to motivate customers to participate in co-creation activities. Researchers found out that all benefits significantly influenced the participation rate (Lorenzo-Romero et al., 2014; Nambisan & Baron, 2009). However, what benefit had the greatest impact on the customer's motivation was neglected. Moreover, the studies were industry-specific. Hypothesis H4 tested industry-independently which of the four benefits was the most important for consumers. The result was that 'learning benefits', which refer to the understanding and knowledge of the products, technology and usage, were the most important for participants (Lorenzo-Romero et al., 2014; Nambisan & Baron, 2009).

Post Type

Regarding the post type, this work measured the engagement of pictures, videos and text-only postings.

This work found out in H5 that pictures have the strongest impact on the overall engagement in social media posting, followed closely by videos. Comparing these results with the literature, we can observe that Kim & Yang (2017) and Pletikosa Cvijikj & Michahelles (2013) found equal results to our like model, whether pictures have a greater impact on engagement compared to videos: In both studies they found that pictures have a stronger positive impact on the number of likes than videos. De Vries et al. (2012) found the opposite, videos have a stronger positive impact than pictures. Sabate et al. (2014) identified that both post types have a similar impact on likes and Su et al. (2015) found a negative impact for both variables. Concluded the results of this work integrate well with previous findings from the reviewed literature. As previously mentioned differences may appear due to different industries or other key factors. This work focused on industry independency.

In H6, it was found out that text-only postings had a negative effect on the engagement. Comparing this result with the reviewed literature, we can see that Pletikosa Cvijikj & Michahelles (2013) and Su et al. (2015) found contrary results: In their studies text-only postings had a positive impact on both the number of likes and comments. Only Sabate et al. (2014) found a negative impact on the number of comments. The reason for contrary findings may be explained by the different industries. This work is characterized by industry-independency, which may yield in results that are more useful when taking the first steps in co-creation efforts. However, iteration should be performed throughout the activity based on differences in industry characteristics.

Post Caption

Regarding the post caption, this work researched the length of the post caption and the inclusion of call-to-actions.

This study found out in H7 that participants do read post descriptions that are longer than three sentences and also have a need to read them in order to engage with the posting. Comparing these results with the findings from previous research, we can see that it is in line with the findings of Sabate et al.

(2014), who implied that larger postings increase the number of likes. On the other hand, Schultz (2017) found that post length negatively affects the engagement. However, Sabate et al. (2014) emphasizes that contrary findings may appear due to e. g. cultural differences or industry specificities. Moreover, factors like age or education may occur as causes.

This work found out in H8 that postings with a call-to-action decrease the overall engagement among participants. The previously reviewed literature found mainly contrary findings. All three variables that were tested resulted in a negative impact on the like and comment model. Attendees said that they would rather not answer questions in the post description, which is opposing to the reviewed literature of De Vries et al. (2012) and Su et al. (2015). Both found out that the number of comments increased significantly, when using questions in the post caption and argued that questions can just be answered by comments. Regarding the second variable, like requests inside descriptions, this work also found a negative impact on likes. De Vries et al. (2012), however, found that like requests inside descriptions strongly increase the number of likes. These contrary findings may be explained by different target groups and their demographics like age and education or even industry differences. The last variable, demand for comments, also had a negative impact in this work. Previous literature did not cover this variable before.

Incentives

This work found out in H9 that extrinsic incentives positively influence the overall engagement on social media postings. However, it was unexpected that there was a slight negative tendency for people participating in contests, but a positive tendency for liking and commenting to win something. Previous studies found similar results regarding overall extrinsic incentives. In such manner, De Vries et al. (2012), Schultz (2017) and Su et al. (2015) found that incentives had an overall positive impact on the number of likes and comments. Only Pletikosa Cvijikj & Michahelles (2013) found a negative impact towards the number of likes, but positive impact for the number of comments.

4.2.2 Recommendations for Action

Based on the findings of the hypotheses testing of this work and the discussion with the reviewed literature, we can now give recommendations for action resulting from each hypothesis regarding the research question ‘How should a startup company create social media postings to increase the engagement of value co-creation projects?’:

Recommendation from H1:

Since customers welcome an open innovation approach inside companies and the advantages of open innovation became evident in the literature review, companies should conduct the following: Open partly their innovation activities to possible contributors.

Recommendation from H2:

The advantages of value co-creation became evident in the literature review. H2 proved that customers would like to help companies in creating new products or services, which leads to the recommendation that companies should generally start co-creation activities.

Recommendation from H3:

All blocks ‘Access’, ‘Transparency’, ‘Benefits’ and ‘Dialogue’ were seen as important variables. This leads to the following recommendations:

1. Use social media to reach your potential co-creators.
2. Give customers access to product and brand information.
3. Be transparent with all information and activities.
4. Offer benefits for participation.

Recommendation from H4:

Since learning benefits were the most important benefits in this industry-independent work, companies should emphasize and focus on educating customers within its value co-creation activities.

Recommendation from H5:

The overall engagement in social media is highest for pictures. Companies should leverage this finding in just using pictures in their co-creation postings.

Recommendation from H6:

Firms should not create postings that only contain text.

Recommendation from H7:

H7 was rejected, however there are different findings in literature due to e. g. industry differences. Firms should therefore test using longer compared to shorter descriptions depending on how their target market responds in their industry.

Recommendation from H8:

Since the findings of this work are contrary to the literature, several factors may explain differences, e. g. industry characteristics or demographics. Therefore, companies should try using postings with call to action and compare the engagement from postings without call to action

Recommendation from H9:

Firms should include extrinsic incentives in their postings to increase likes and comments.

5 Conclusion

This work examined two main objectives: 1) The creation of a startup-oriented framework for using social media as a co-creation tool with users; 2) The identification of the key factors which promote user engagement in social media co-creation processes. As a basis for these purposes, a literature review was conducted, which concludes to the following: Open innovation and value co-creation are two concepts that may help startups to build relationships which bring in much needed external knowledge to drive innovation activities. However, guidance like frameworks or recommendations for action exist too little which may help leading firms in the right direction. Accordingly, social networks and the possibility to create postings can be one of the media to reach possible co-creation partners, build relationships and extract information. For that purpose, the first objective was covered and a framework was created that helps increasing the probability for user participation in social media postings. The developed framework combines models used in value co-creation and social media knowledge that guide a firm individually to the implementation of co-creation activities. Companies should provide access to and be fully transparent about their brand and product information using their social media company profile. To start engaging with customers the firm should create contests in postings while using pictures as media type. The posting's caption should include a question and one or more benefits of the U&G approach (Learning; Social integrative; Personal integrative; Hedonic). Following this literature based framework, firms can build see a successful basis for co-creation implementation.

For the second objective and the research question 'How should a startup company create social media postings to increase the engagement of value co-creation projects?', quantitative research was conducted. An online survey was created and the data with 830 participants was analyzed through frequency tables, contingency tables, means and a t-test. These statistical methods were used to test the hypotheses.

Results & Recommendation

The statistics showed that customers welcome open innovation in companies and would also like to help in creating new products or services. In terms of framework validation, it is shown that all blocks of the DART-Model are important from a customer perspective and that, regarding the U&G approach, learning benefits are the most important for customers. In particular, the findings show that social media is the best way for companies to communicate with customers. With that said, social media postings with pictures earn higher engagement than videos and text-only postings decrease the probability of users engaging with it. Post descriptions with more than three sentences in it do not decrease the user engagement. Contrary to most literature, this study showed that call-to-actions do not increase the engagement rate. Lastly, extrinsic incentives increase the user engagement.

From these results, recommendations for action were formed that conclude to the following: Companies should be transparent about all their activities and give customers access to product and brand information. All social media postings should use pictures that include an educational message about their products and offer the possibility to win something to increase the overall engagement.

Practical Implications

In terms of practical implications, this work provides a strategy including recommendations for action that is low-cost and leads to comparably quick insights for product or service development. Therefore, it makes it particularly interesting for startups which often lack financing and know-how. However, ordinary companies can also profit from this work since valuable results may be obtained using this method. Apart from that, this work contributes to the existing body of knowledge in social media engagement tactics, which was not done industry-independently before. Furthermore, with the newly developed literature-based framework, this work contributed to the lack of guiding models in the theory of value co-creation.

Limitations

Although most findings integrate well with the reviewed literature, there may have been limitations regarding the research. The sample consisted mainly of non-native English speakers, which may have resulted in different understanding of the questions and therefore may have falsified the data. Another limitation may have been cultural bias. Since 89% of the sample were Portuguese, cultural bias was not diversified, which may have resulted in a potential impact on the findings. Due to time constraints and the lack in language knowledge, this work did not address such limitations.

Future Research

Future research should address the limitations mentioned above by translating surveys to each mother tongue and expand the distribution to a diversified sample. Since the findings for call-to-actions did not coincide with the literature, future studies should readdress this matter with different target groups and more nationalities. Furthermore, it is still not fully clear how long social media postings should be to increase the overall engagement and to what extent it affects it. Lastly, this work offered a framework that yet needs to be validated with surveys and practically tested by firms.

6 Bibliography

- Alves, H., Fernandes, C., & Raposo, M. (2016). Value co-creation: Concept and contexts of application and study. *Journal of Business Research*, 69(5), 1626–1633. <https://doi.org/10.1016/j.jbusres.2015.10.029>
- Bashir, N., Papamichail, K. N., & Malik, K. (2017). Use of Social Media Applications for Supporting New Product Development Processes in Multinational Corporations. *Technological Forecasting and Social Change*, 120, 176–183. <https://doi.org/10.1016/j.techfore.2017.02.028>
- Boyd, D. M., & Ellison, N. B. (2008). Social Network Sites : Definition , History , and Scholarship. *Journal of Computer-Mediated Communication*, 13, 210–230. <https://doi.org/10.1111/j.1083-6101.2007.00393.x>
- Braojos-Gomez, J., Benitez-Amado, J., & Javier Llorens-Montes, F. (2015). How do small firms learn to develop a social media competence? *International Journal of Information Management*, 35(4), 443–458. <https://doi.org/10.1016/j.ijinfomgt.2015.04.003>
- Chesbrough, H. (2006). *Open Business Models*. Cambridge, MA: Harvard Business School Press.
- Chesbrough, H. (2012). Open Innovation: Where We've Been and Where We're Going. *Research-Technology Management*, 55(4), 20–27. <https://doi.org/10.5437/08956308X5504085>
- Constantinides, E., & Fountain, S. J. (2008). Web 2.0: Conceptual foundations and marketing issues. *Journal of Direct, Data and Digital Marketing Practice*, 9(3), 231–244. <https://doi.org/10.1057/palgrave.dddmp.4350098>
- Dahlander, L., & Gann, D. M. (2010). How open is innovation? *Research Policy*, 39(6), 699–709. <https://doi.org/10.1016/j.respol.2010.01.013>
- De Vries, L., Gensler, S., & Leeftang, P. S. H. (2012). Popularity of Brand Posts on Brand Fan Pages: An Investigation of the Effects of Social Media Marketing. *Journal of Interactive Marketing*, 26(2), 83–91. <https://doi.org/10.1016/j.intmar.2012.01.003>
- Erspective, L. O. P., & Lusch, R. F. (2015). Service Innovation: A Service-

- Dominant-Logic perspective. *MIS Quarterly*, 39(1), 155–175.
<https://doi.org/10.25300/MISQ/2015/39.1.07>
- Hitchen, E. L., Nylund, P. A., Ferràs, X., & Mussons, S. (2017). Social media: open innovation in SMEs finds new support. *Journal of Business Strategy*, 38(3), 21–29. <https://doi.org/10.1108/JBS-02-2016-0015>
- Huizingh, E. K. R. E. (2011). Open innovation: State of the art and future perspectives. *Technovation*, 31(1), 2–9.
<https://doi.org/10.1016/j.technovation.2010.10.002>
- Jeppesen, L. B., & Frederiksen, L. (2006). Why Do Users Contribute to Firm-Hosted User Communities? The Case of Computer-Controlled Music Instruments. *Organization Science*, 17(1), 45–63.
<https://doi.org/10.1287/orsc.1050.0156>
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world , unite ! The challenges and opportunities of Social Media. *Business Horizons*, 53, 59–68. <https://doi.org/10.1016/j.bushor.2009.09.003>
- Kim, C., & Yang, S. U. (2017). Like, comment, and share on Facebook: How each behavior differs from the other. *Public Relations Review*, 43(2), 441–449. <https://doi.org/10.1016/j.pubrev.2017.02.006>
- Kujur, F., & Singh, S. (2017). Asia Pacific Management Review Engaging customers through online participation in social networking sites. *Asia Pacific Management Review*, 22(1), 16–24.
<https://doi.org/10.1016/j.apmr.2016.10.006>
- Laursen, K., & Salter, A. (2006). Open for innovation: The role of openness in explaining innovation performance among U.K. manufacturing firms. *Strategic Management Journal*, 27(2), 131–150.
<https://doi.org/10.1002/smj.507>
- Lombardo, S., & Cabiddu, F. (2017). What's in it for me? Capital, value and co-creation practices. *Industrial Marketing Management*, 61, 155–169.
<https://doi.org/10.1016/j.indmarman.2016.06.005>
- Lorenzo-Romero, C., Constantinides, E., & Brünink, L. A. (2014). Co-creation: Customer Integration in Social Media Based Product and Service Development. *Procedia - Social and Behavioral Sciences*, 148, 383–396.
<https://doi.org/10.1016/j.sbspro.2014.07.057>
- Martini, A., Massa, S., & Testa, S. (2014). Customer co-creation projects and

- social media: The case of Barilla of Italy. *Business Horizons*, 57(3), 425–434. <https://doi.org/10.1016/j.bushor.2014.02.003>
- Nambisan, S., & Baron, R. A. (2009). Virtual customer environments: Testing a model of voluntary participation in value co-creation activities. *Product Innovation Management*, 26(4), 388–406. Retrieved from https://www.researchgate.net/profile/Satish_Nambisan/publication/229613149_Virtual_Customer_Environments_Testing_a_Model_of_Voluntary_Participation_in_Value_Co-Creation_Activities/links/5998a1fdaca272e41d3c59de/Virtual-Customer-Environments-Testing-a-Mode
- Obar, J. A. (2015). Social media definition and the governance challenge: An introduction to the special issue. *Telecommunications Policy*, 39, 745–750. <https://doi.org/10.1016/j.telpol.2015.07.014>
- Obar, J. A., Zube, P., & Lampe, C. (2012). Advocacy 2.0: An Analysis of How Advocacy Groups in the United States Perceive and Use Social Media as Tools for Facilitating Civic Engagement and Collective Action. *Journal of Information Policy*, 2, 1–25.
- Payne, A. F., Storbacka, K., & Frow, P. (2008). Managing the co-creation of value. *Journal of the Academy of Marketing Science*, 36(1), 83–96. <https://doi.org/10.1007/s11747-007-0070-0>
- Petri, J., & Jacob, F. (2016). The customer as enabler of value (co)-creation in the solution business. *Industrial Marketing Management*, 56, 63–72. <https://doi.org/10.1016/j.indmarman.2016.03.009>
- Piller, F., Vossen, A., & Ihl, C. (2012). From Social Media to Social Product Development: The Impact of Social Media on Co - Creation of Innovation. *Die Unternehmung*, 65(1), 1–22.
- Pletikosa Cvijikj, I., & Michahelles, F. (2013). Online engagement factors on Facebook brand pages. *Social Network Analysis and Mining*, 3(4), 843–861. <https://doi.org/10.1007/s13278-013-0098-8>
- Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*, 18(3), 5–14. <https://doi.org/10.1002/dir.20015>
- Ranjan, K. R., & Read, S. (2016). Value co-creation: concept and measurement. *Journal of the Academy of Marketing Science*, 44(3), 290–

315. <https://doi.org/10.1007/s11747-014-0397-2>
- Sabate, F., Berbegal-Mirabent, J., Cañabate, A., & Lebherz, P. R. (2014). Factors influencing popularity of branded content in Facebook fan pages. *European Management Journal*, 32(6), 1001–1011. <https://doi.org/10.1016/j.emj.2014.05.001>
- Schultz, C. D. (2017). Proposing to your fans: Which brand post characteristics drive consumer engagement activities on social media brand pages? *Electronic Commerce Research and Applications*, 26, 23–34. <https://doi.org/10.1016/j.elerap.2017.09.005>
- See-To, E. W. K., & Ho, K. K. W. (2014). Value co-creation and purchase intention in social network sites: The role of electronic Word-of-Mouth and trust - A theoretical analysis. *Computers in Human Behavior*, 31(1), 182–189. <https://doi.org/10.1016/j.chb.2013.10.013>
- Spender, J.-C., Corvello, V., Grimaldi, M., & Rippa, P. (2017). Startups and open innovation: a review of the literature. *European Journal of Innovation Management*, 20(1), 4–30. <https://doi.org/10.1108/EJIM-12-2015-0131>
- Statista. (2018). Most popular social networks worldwide as of April 2018, ranked by number of active users (in millions).
- Storbacka, K., Brodie, R. J., Böhmman, T., Maglio, P. P., & Nenonen, S. (2016). Actor engagement as a microfoundation for value co-creation. *Journal of Business Research*, 69(8), 3008–3017. <https://doi.org/10.1016/j.jbusres.2016.02.034>
- Su, N., Reynolds, D., & Sun, B. (2015). How to make your Facebook posts attractive. *International Journal of Contemporary Hospitality Management*, 27(8), 1772–1790. <https://doi.org/10.1108/IJCHM-06-2014-0302>
- Swani, K., Milne, G. R., Brown, B. P., Assaf, A. G., & Donthu, N. (2017). What messages to post? Evaluating the popularity of social media communications in business versus consumer markets. *Industrial Marketing Management*, 62, 77–87. <https://doi.org/10.1016/j.indmarman.2016.07.006>
- The Writing Studio. (n. d.). Survey Research. <https://writing.colostate.edu/guides/guide.cfm?guideid=68>
- The Writing Studio. (n. d.). Electronic Surveys. <https://writing.colostate.edu/guides/page.cfm?pageid=1406&guideid=68>

USCLibraries. (2018). Organizing Your Social Sciences Research Paper:
Quantitative Methods. <http://libguides.usc.edu/writingguide/quantitative> (
Von Hippel, E. (2005). Democratizing Innovation. Cambridge, MA: The MIT
Press.

7 Appendix

7.1 Online Survey

Survey For Innovation And Social Media Engagement

Thank you for agreeing to take part in this important survey gaining your thoughts about innovation and social media, and measuring the engagement for social media postings. This survey should only take 10 minutes to complete.

In the end of the survey, you can enter your email and have the chance to win **3x 50€ Amazon** gift cards.

Be assured that all answers you provide will be kept in the strictest confidentiality.

1* Companies should partly open their innovation activities to the public.

1	2	3	4	5
Strongly disagree				Strongly agree

2* I would like to help companies creating new products or services.

1	2	3	4	5
Strongly disagree				Strongly agree

3* Companies need to allow me access to product and brand information for me to participate in a conversation about new products or services.

1	2	3	4	5
Strongly disagree				Strongly agree

4* Companies need to be transparent with all information and activities for me to participate in a conversation about new products or services.

1	2	3	4	5
Strongly disagree				Strongly agree

5* Social media is the best way for companies to communicate with me.

1	2	3	4	5
Strongly disagree				Strongly agree

6* Benefits are important for me when participating in a conversation about new products or services.

1	2	3	4	5
Strongly disagree				Strongly agree

7* Social media postings can be used by companies to start a conversation about new products or services.

What would motivate you to engage with such a posting? (Multiple answers possible)

- | | | |
|--|--|---|
| <input type="checkbox"/> I want to know or learn more about the product/service. | <input type="checkbox"/> I want to belong to a social group that works towards a goal. | <input type="checkbox"/> I want to improve my ability to complete tasks and gain reputation inside the project. |
| <input type="checkbox"/> The discussion and problem-solving is mentally stimulating. | <input type="checkbox"/> Most likely, I would not engage with such postings. | |

8* I 'like' pictures in social media.

1	2	3	4	5
Strongly disagree				Strongly agree

9* I 'like' videos in social media.

1	2	3	4	5
Strongly disagree				Strongly agree

10* I rather 'like' pictures than videos in social media.

1	2	3	4	5
Strongly disagree				Strongly agree

11* I write comments on pictures.

1	2	3	4	5
Strongly disagree				Strongly agree

12* I write comments on videos.

1	2	3	4	5
Strongly disagree				Strongly agree

13* I rather write more comments on pictures than on videos.

1	2	3	4	5
Strongly disagree				Strongly agree

14* I 'like' postings with nothing but text.

1	2	3	4	5
Strongly disagree				Strongly agree

15* I write comments on postings with nothing but text.

1	2	3	4	5
Strongly disagree				Strongly agree

16* I generally read the description of a posting before I 'like' or comment.

1	2	3	4	5
Strongly disagree				Strongly agree

17* I do not read posting descriptions that are longer than 3 sentences.

1	2	3	4	5
Strongly disagree				Strongly agree

18* I 'like' postings regardless of their description.

1	2	3	4	5
Strongly disagree				Strongly agree

19* I comment on postings regardless of their description.

1	2	3	4	5
Strongly disagree				Strongly agree

20* I like to answer questions in the description of a posting.

1	2	3	4	5
Strongly disagree				Strongly agree

21* Descriptions that demand me to comment on a posting make me do so.

1	2	3	4	5
Strongly disagree				Strongly agree

22* Descriptions that demand me to 'like' a posting make me do so.

1	2	3	4	5
Strongly disagree				Strongly agree

23* I like to participate in contests on social media.

1	2	3	4	5
Strongly disagree				Strongly agree

24* I 'like' postings, if I have the chance to win something by doing so.

1	2	3	4	5
Strongly disagree				Strongly agree

25* I comment on postings, if I have the chance to win something by doing so.

1	2	3	4	5
Strongly disagree				Strongly agree

26* What social media platforms do you use? Sort by usage.

- ☐ Facebook
- ☐ YouTube
- ☐ Instagram
- ☐ Tumblr
- ☐ Reddit
- ☐ Twitter
- ☐ LinkedIn
- ☐ Snapchat
- ☐ Pinterest

27* What is your age?

☐ Under 18 years old

☐ 18-24 years old

☐ 25-34 years old

☐ 35-44 years old

☐ 45-54 years old

☐ 54 years or older

28* What is your gender?

☐ Female

☐ Male

29* What is your nationality?

30* What is the highest degree or level of school you have completed?

If currently enrolled, highest degree received.

☐ High school graduate

☐ Bachelor's degree

☐ Master's degree

☐ Professional degree

☐ Doctorate degree

31 Enter your email to enter the contest to win one of three 50€ Amazon gift cards.